

Spam cops! Digital vigilantes shoot first, ask questions later. Innocent businesses caught in the crossfire struggle to fight back. **PAGE 58.**



NetworkWorld

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September 10, 2001 ■ Volume 18, Number 37

AT&T dives into metro Ethernet

■ BY DENISE PAPPALARDO

ATLANTA — AT&T will become the first of the big three wide-area carriers to enter the Ethernet-based service game when it launches two offerings at NetWorld+Interop 2001 this week.

Even though AT&T will initially offer the services on a metropolitan basis only, the announcement is significant because it represents the largest carrier embracing a potentially disruptive technology. End-to-end Ethernet could ultimately trash the cost conventions of traditional wide-area datacom services, a fact that has caught the attention of many carriers.

For its part, AT&T is expected to introduce its Metro Ethernet and Managed Internet Service (MIS) Ethernet Access offerings. The Metro services will let users in 68 cities establish point-to-point Ethernet connections ranging in speed from 50M to 600M bit/sec. The MIS service will let users in AT&T's local markets access the Internet at up to 1G bit/sec.

Metropolitan Ethernet services offer users an alternative to standard SONET OC-3 or OC-12 services, says Nick Maynard, an ana-

INSIDE MORE INTEROP NEWS

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- **Fixed wireless to get more flexible. PAGE 8**
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lyst at The Yankee Group. There are fewer hassles handing off an Ethernet connection to a metropolitan or Ethernet network, and

See Metro Ethernet, page 12

Users give HP/Compaq combo a big thumbs down

■ BY DENI CONNOR AND APRIL JACOBS

Significant overlap between Hewlett-Packard's and Compaq's products — from servers and operating systems to handhelds and storage products — has users worried that the multibillion-dollar deal proposed last week will be a bust. The new HP includes sorting out four server architectures, seven operating systems, four storage architectures and multiple service businesses.

The companies, which saw Wall Street drive the value of their deal down from \$25 billion when it was announced last Tuesday to roughly \$20 billion by Friday, insist the marriage will result in a more complete product and service portfolio. On paper, the new HP would have leading market shares in Unix and PC servers, desktop PCs, storage and printers. What's more, officials say the



CEOs Carly Fiorina from HP and Michael Capellas from Compaq have been under fire since announcing their companies' planned union last week.

united company could shave some \$2.5 billion in operating costs, which would make it more competitive with the likes of Dell, IBM and Sun.

But not so fast, experts say.

For one thing, both companies have spotty acquisition records. For example, Compaq is still suffering indigestion from paying

See HP/Compaq, page 104

■ SPECIAL REPORT: METROPOLITAN-AREA NETWORKS

Be your own MAN

DWDM, Gig Ethernet enabling users to build private metro nets.

■ BY PHIL HOCHMUTH

As any real estate agent will tell you, it is better to own than rent. The same can hold true for metropolitan-area networks.

While many service providers now offer high-speed Ethernet MANs, some corporations — both large and small — are taking the "do-it-yourself" approach. Despite challenges — which include

cutting through government red tape to lay fiber, and integrating carrier-class optical routing into an enterprise network — users are finding that virtually unlimited bandwidth for no monthly charge is worth it.

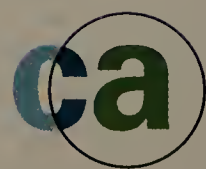
One city where large-scale private MANs are under construction is New York — the quintessential

See MAN, page 15



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PHOTO: GARY LAUFMAN

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The spam police

Spam-fighting tactics come under fire. **Page 58.**

Switch interoperability study

Vendors prove they have made impressive strides toward full interoperability. **Page 65.**

Digital video archiving

Convera Screening Room Version 2.2 wins our comparative review of digital video archiving software and services. **Page 71.**

Dell PowerEdge 2550

At \$6,485, this midmarket, rack-optimized server tries to differentiate itself based on price. **Page 79.**



PHOTO: MARIANNE BARCELLONA

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Interactive

HP/Compaq forum

Big news yields big reaction, and Fusion visitors certainly have their opinions. Is it really "The biggest disaster of the millennium" as one reader put it? Others are worried about what this means for their Compaq certifications. Add your thoughts. **DocFinder: 5976**

Microsoft catches a break

The prospect of Baby Bills has ended, as the government says it won't force Microsoft to split up. Reactions range from disbelief to shame. See what else folks have been saying. **DocFinder: 5977**

NetWorld+Interop news

Heading to Atlanta? Staying home? Either way, we've got you covered. If you're going to the big show, check out our online planner of the keynotes, events and sessions you won't want to miss. (PDA fans can download it to their devices.) If you can't make the trip, stay on top of all the goings-on at our N+I breaking news page. Plus, *Network World* Multimedia Editor Jason Meserve will offer daily audio roundups from the show floor. **DocFinder: 5978**

VPN troubles

After trying for five years to get lab-tested IP Security equipment to interoperate, organizers of the world's largest VPN-based e-commerce network are abandoning their multivendor strategy. Have you had any luck getting equipment to play nice? **DocFinder: 5979**

Columnists

Help Desk

Migrating from NetWare 3 to NetWare 5
Ron Nutter answers a reader's question: "My company is finally moving from NetWare 3 to NetWare 5. Due to the number of workstations that are on the network, my question is, do I need to upgrade the clients to the latest version of the client software that comes with NetWare 5, or can I leave them the way they are?"

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Keeping Current

Fantasy land
Fred McGlimans has a riddle for you. What do HP, Compaq and Bill Gates have in common?

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View from The Edge

Tellabs, Riverstone head to court
Senior Editor Tim Greene says the pair are headed for an ugly court battle, each accusing the other of violating a strategic alliance agreement. **DocFinder: 5982**

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News Bits

Feds to Microsoft: Forget about the breakup

■ Microsoft's foes reacted with surprise, and legal experts say the antitrust case against the software giant still has some rough waters to negotiate even after the Department of Justice last week said it was abandoning efforts to break up the company. The Department of Justice also said it would no longer pursue the "tying" charge against Microsoft, which alleged the company illegally linked its Web browser to Windows to maintain its monopoly in the operating system market. The Justice Department said its actions were to facilitate a prompt resolution to the case. The government now says it will focus on conduct remedies when the case re-opens on Sept. 21 in U.S. District Court in Washington, D.C., with a status report hearing before Judge Colleen Kollar-Kotelly. The sides must file a joint status report to the court on Sept. 14, which should reveal what sort of conduct remedies the two sides have in mind. The proceedings could take up to six months, according to legal experts, and even after a verdict is rendered, each side would have the right to appeal.



The Microsoft-DoJ ball will soon be in Judge Colleen Kollar-Kotelly's court.

Guilty as charged

■ A former hardware engineer at a national grocery distributor in Florida has been found guilty in U.S. District Court in Miami on two federal counts of computer sabotage. After six days of arguments and only six hours of deliberations, the jury last week found Herbert Pierre-Louis Jr., guilty of planting a software virus that disabled the computer network at Purity Wholesale Grocers for two days. Company executives testified during the trial that the June 18, 1998 incident at the \$1.5 billion company cost approximately \$84,000 in lost profits, new hardware and software, and the in-house man-hours needed to get the system up and running again. Pierre-Louis' attorney said he will ask the judge to overturn the verdict and issue a new trial. Pierre-Louis, who worked for Purity Wholesale for almost a year, is free on his own recognizance until the sentencing hearing, which is slated for November. He faces up to five years for each of the two counts. The government claimed that Pierre-Louis sabotaged his employer's network after being reprimanded for coming in to work late.

Fighting the 'gray market'

■ Tired of seeing millions of dollars spent every year on brand-name IT products on the "gray market" — essentially, unauthorized sales channels — a group of IT heavyweights is attempting to regain control of their reseller channels. 3Com, Apple, Compaq, Hewlett-Packard, Nortel and Xerox last week announced the formation of the Anti-Gray Market Alliance (AGMA), a group open to all technology companies. The group plans to educate the IT marketplace about illegal or deceptive brokering or diversion of products, and address the flow of products into the gray market. The group estimates that gray market sales total \$20 billion per year. AGMA can be reached at www.agmatoday.org.

Domain name registry expands

■ New.net, an alternative domain name registry, has announced its first major foray into the corporate market by signing wholesaler Bulkregister.com for high-volume domain name sales to large companies and Web design firms. New.net is a controversial start-up that sells domain names that are not sanctioned by the Internet Corporation for Assigned Names and Numbers (ICANN), a nonprofit organization that oversees the .com, .net and .org domains. New.net offers English names with 30 extensions such as .shop, .inc, .llp, .llc and .ltd as well as Spanish, French and Portuguese translations. By adding Bulkregister.com to its resellers, New.net is targeting companies that own hundreds of domain names. Bulkregister.com counts among its customers Revlon, Amway, Caterpillar and Dow Jones. These companies get discounts for registering 50 or more names per month with Bulkregister.com, which is an ICANN-accredited registrar. The Internet's domain name system doesn't automatically resolve New.net names, but New.net has signed deals with EarthLink, Prodigy, Excite@Home and several other ISPs so that users of these ISPs can access New.net Web sites without a special software plug-in. New.net officials say 65 million Internet users can access New.net sites. Officials hope that integrating the ordering process for their names into the Bulkregister.com interface will make it easier for companies to order large numbers of New.net names.

Spending the summer with Big Blue

■ For students returning to college, the question is always: "So what did you do on your summer vacation?" Some work, some play, but for the 100 or so students across the country who joined IBM's "Extreme Blue" summer internship program, the answer is: "I helped design the next generation of network products." As paid interns at IBM, these students — most on the path to college degrees in computer science or business — were invited into three of Big Blue's development labs to tinker with software going from the drawing board to commercial release. Under the wing of IBM mentors, the students spent the summer working on future versions of Lotus Notes groupware, Java-based application servers for telephone companies or Tivoli Systems security products. For IBM, the Extreme Blue internship program, which just completed its third summer, has brought solid gains, even resulting in 18 patent filings, says John Wolpert, Extreme Blue program manager in IBM's Austin, Texas, labs.

The Good The Bad The Ugly



Dell debuted its homegrown PowerConnect switch line, with prices starting at \$10 per 100M bit/sec port. Watch out Cisco and 3Com, you've seen what Dell has done to Compaq and Hewlett-Packard.



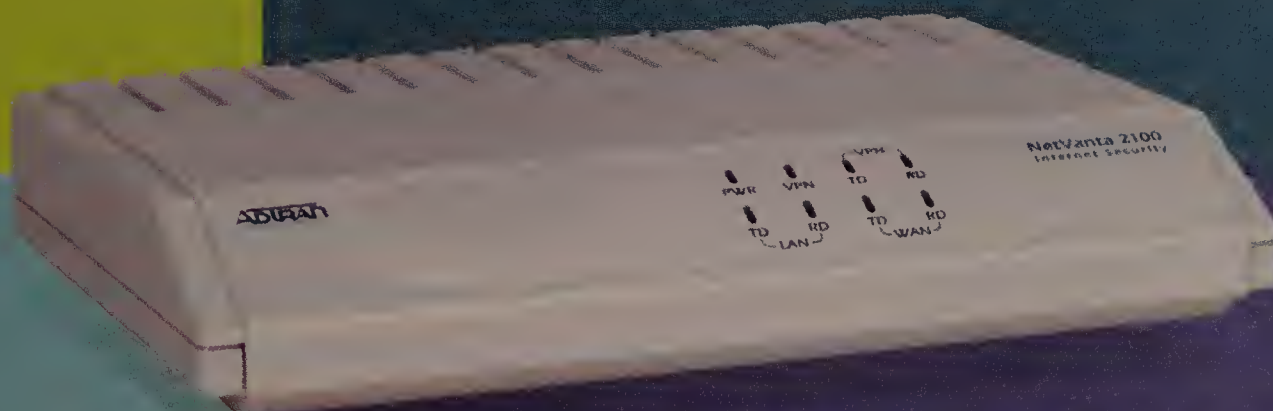
NetObjects closed down shop after giving the Web site software business a go since 1995. Even sugardaddy IBM (which owns about half the company) couldn't save the vendor.



Hewlett-Packard's \$25 billion bid for Compaq early last Tuesday morning turned into a \$20 billion bid by the end of day due to a less-than-enthusiastic response by stockholders. ➤



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Avaya, Cisco tackle 10 Gigabit nets

But will customers pay big bucks for faster technology?

■ BY PHIL HOCHMUTH

ATLANTA — NetWorld+Interop 2001 attendees this week will catch one of the first waves of 10G Ethernet products, but initial pricing will put the technology out of reach for most corporations.

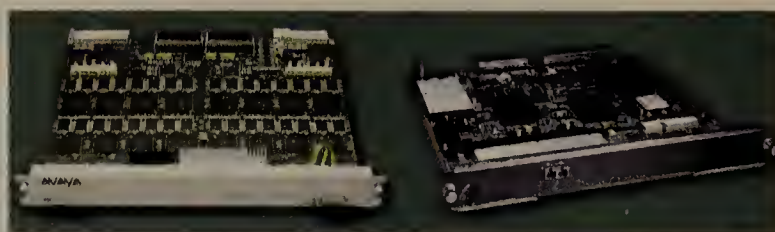
Avaya and Cisco, among the companies showing 10G bit/sec wares, are charging tens of thousands of dollars for their products, but hope customers will be enticed to use them to support offsite data storage and other advanced applications.

Avaya will announce a 10G Ethernet blade for its Cajun P880 and P550 enterprise backbone switches that will include three optical interface options for various distances and fiber media types. Optics for the blade include an 850-nm transceiver that can send traffic 984 feet over single-mode fiber, commonly used for old FDDI rings. Also, 1310-nm and 1550-nm versions are available for sending traffic up to 6 and 25 miles, respectively, over more

expensive single-mode fiber.

Avaya says its new module, which takes up two slots in a P880 or P550 chassis, can switch 10G traffic at Layers 2 and 3. The company says the module also supports 802.3ad link aggregation, which could be used to trunk two 10G links together in a chassis for a virtual 20G bit/sec pipe and add redundancy in case of a fiber or switch module failure. The blade will cost \$20,000 to \$60,000, depending on interfaces.

Cisco announced two 10G modules last week, and will show 10G products at Interop. The new blades for the Catalyst 6500 switch and Cisco 7600 Internet Router are thinner than the Avaya offerings, taking up a single slot in a chassis. Cisco's single-port 10GBase-EX4 module has proprietary 1550-nm optics that can transmit 10G traffic 31 miles over single-mode fiber, which is 25% farther than the distance supported by the 802.3ae standard for 1550-nm interfaces, Cisco says. The module is designed to support



New 10G bit/sec switch modules from Avaya (left) and Cisco could help large companies extend Ethernet into MANs and WANs.

Layer 2 and 3 switching, as well as higher-layer switching when used in a Catalyst 6500 switch fitted with the Content Switch Module. The module is scheduled to ship by the end of this month and will cost \$80,000.

Also announced was a 10G-Base-LR module with 1310-nm optics based on the 802.3ae draft, able to reach distances of 6 miles over single-mode fiber. The blade comes with a base

module and a detachable optical interface that could be swapped out with other 10G optics that are expected to become available as the standard approaches ratification in the next six to nine months. Cisco plans to ship the blade by year-end but would not disclose pricing.

One user who will test the 10G Cisco blades this month is anxious to see if Ethernet can be

used as a less expensive long-haul alternative to ATM.

"Ten Gigabit Ethernet is certainly a candidate for our long-distance networking needs," says Leonard Stans, manager of the Advanced Networking Integration Department at the Sandia National Labs in Albuquerque, N.M. The lab plans to test 10G connects between its supercomputers, and to connect to other government laboratories.

If interoperability and reliability can be proven, Stans foresees that 10G Ethernet will be less expensive than ATM in the long run — despite its high price now — because he sees Ethernet technology as being less complex and easier to manage.

Avaya: www.avaya.com; Cisco: www.cisco.com

Multipoint fixed wireless system on tap

Western Multiplex expands beyond point-to-point systems.

■ BY MICHAEL MARTIN

ATLANTA — Fixed wireless equipment provider Western Multiplex this week will unveil its first point-to-multipoint system, an alternative to point-to-point systems for connecting more than two sites.

Called Tsunami Multipoint, the system consists of a subscriber unit that sits on the wall or roof of a customer's building and a base station that aggregates traffic from multiple subscriber units and resides on the top of a building or tower.

The system, which starts at \$5,000 per shared 20M bit/sec base station and \$1,300 per site, would typically be less expensive than a point-to-point fixed wireless system, but would deliver shared rather than dedicated bandwidth.

Organizations might also find the new system to be less expensive than traditional T-1 lines, although trade-offs include having to manage the Western Multiplex system and overcoming any concerns about wireless reliability.

While Western Multiplex is not the first company to offer point-to-multipoint fixed wireless, it is one of the first to do so in the unlicensed 5.8-GHz band. Other

products, both point-to-point and point-to-multipoint, from vendors such as Cisco, Aperto Networks and Malibu Networks, operate in the 2.4-GHz band.

"There's always some uncertainty if you don't own the spectrum," says Greg Collins, an analyst with Dell'Oro Group. "But the 5.8-GHz band they're using is much less crowded than the 2.4-GHz band."

To reassure users, Western Multiplex has added interference blocking technology, letting users cut out pieces of spectrum that are causing problems.

Western Multiplex offers 20M bit/sec base stations that can reach out to 8.4 miles and 60M bit/sec base stations that can range to about 5 miles. Customers can decide how much bandwidth will be dedicated upstream and downstream. More than 1,000 subscribers can be assigned to one base station.

For larger installations, customers can group up to six base stations to get up to 360M bit/sec of total bandwidth.

On the subscriber end, each unit connects to a user network through an RJ-45 jack.

The subscriber units, which can operate with near-line-of-sight, are deployed using a

sound system to measure signal strength.

Customers can manage their wireless networks with Tsunami software that runs on Windows NT or 2000 and communicates with SNMP agents residing in the base stations.

Tsunami Multipoint is functionally compliant with the 802.16b broadband wireless access standard being hammered out by the IEEE. Product will begin shipping by December.

Western Multiplex: www.wmux.com

Companies prep wireless, IP voice gear

Cisco and Avaya will also have new VPN, wireless, security and IP voice products on display this week. Here's a sampling:

- Avaya will introduce its Wireless Access Point III (AP-3), which combines 11M bit/sec 802.11b and 54M bit/sec 802.11a radio transceivers in one device, letting companies upgrade from one to the other. The product's 802.1X port authentication will safeguard wireless networks by requiring end users to log on to a network device other than a central server to gain network access. The AP-3 will cost \$1,300.

- Avaya will debut the IP Office IP PBX, which can support up to 180 end users and includes call center software for up to 75 call agents. The box supports all Avaya's IP phone models and circuit-switched phones, and comes with interfaces for T-1, ISDN and analog phone lines. Applications include unified voice mail and e-mail integration with Microsoft Exchange servers. The IP Office supports the H.323 voice-over-IP protocol and can be networked with other Avaya IP PBXs and regular PBXs. The PBX is priced at \$2,550.

- Cisco will show off new VPN and security products, including a 10- to 50-user PIX 501 firewall; host-based intrusion detection software for Windows NT/2000 and Solaris Web servers; encryption acceleration modules for Cisco 7200 and 7100 routers for setting up site-to-site VPNs; and VPN client and network management software.

Phil Hochmuth

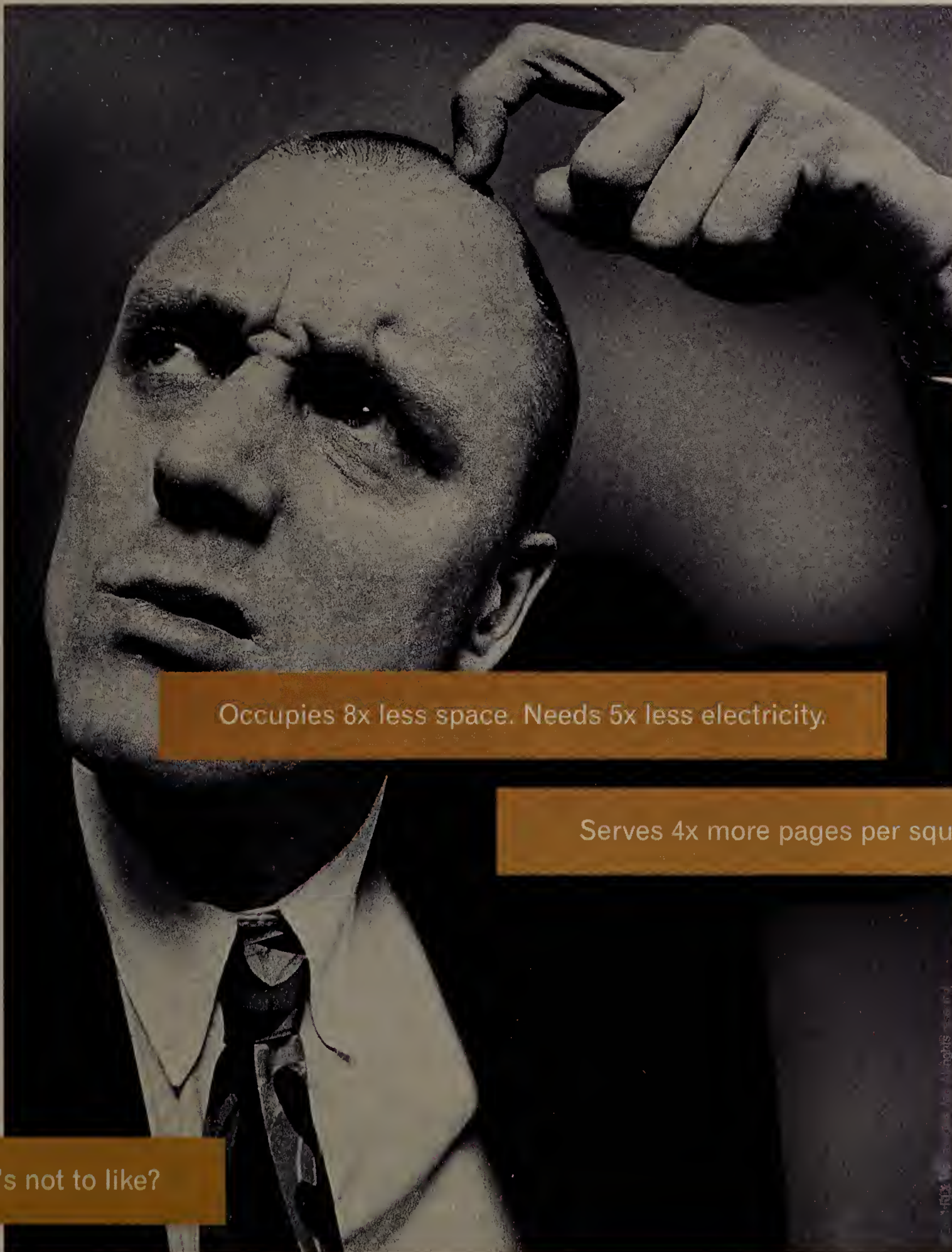


THIS WEEK'S QUESTION:

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PGP bolsters security package

■ BY ELLEN MESSMER

ATLANTA — PGP Security will unveil this week at NetWorld+Interop 2001 in Atlanta an easier-to-use version of its CyberCop network vulnerability-assessment tool that will help customers more quickly find and fix security weaknesses in PCs, servers, switches and firewalls.

Called Distributed CyberCop Scanner 2.0, the tool consists of PC-based software agents and the ePolicy Orchestrator console. The console downloads the agents to devices attached to corporate LANs and, in turn, those agents report back to the console about the security status of Windows NT or Unix-based servers and desktops on the LAN. The previous version of CyberCop could only re-

port on one LAN segment at a time and had to be deployed manually to each LAN segment, a time-consuming task.

The PC-based CyberCop agent software reports its findings on many types of known problems — such as the Microsoft Internet Information Server buffer-overflow vulnerability exploited by the recent Code Red computer worm — to the ePolicy Orchestrator.

The Orchestrator console can also now be used to distribute software such as antivirus updates. CyberCop's cost is based on the number of nodes, starting at \$62 per node for 100, though costs drop for larger quantities.

The latest version of CyberCop can make a vulnerability assessment of an entire network at



The latest version of PGP Corporate Desktop can now be managed via PGP's central console, ePolicy orchestrator.

once, as the CyberCop software agents report back across the Internet in a centrally-controlled automated scan, says Chris O'Farrell, director of ethical

hacking at Predictive Systems in Reston, Va., who is testing the second version.

A handful of competing vulnerability-assessment tools, including Symantec's NetRecon and Internet Systems Security's System Scanner, also work through multiple PC-based agents collecting information on the network. O'Farrell finds CyberCop the most flexible in how it lets the user set up customized scripts to test for vulnerabilities.

Ironically, as PGP last week prepared to announce the new CyberCop scanner, the company, a security division of Network Associates, acknowledged that a business partner, Garrison Technologies, identified a buffer-overflow vulnerability in the PGP Gauntlet firewall. PGP will issue a software patch to fix this problem.

The glitch would have allowed hackers to take control of the firewall by sending a buffer override through the firewall's mail daemon, according to Marvin Dickerson, PGP's director of product management.

In addition to its Distributed CyberCop Scanner, PGP will announce:

- PGP Corporate Desktop 7.5, an upgrade to PGP's combined mail encryption and desktop firewall application, adding support for ePolicy Orchestrator for remote management. Cost is \$140 per node for 100 nodes.

- PGPwireless for Windows CE, which is encryption software to conceal, authenticate and digitally sign data stored on handheld devices using CE. PGP also ships PGPwireless for the Palm OS Version 2.0. The cost is \$36 per node for 100 nodes.

- The PGP E-Business Server for bulk data encryption will be available for the IBM OS/390 mainframe in the fourth quarter, with pricing expected to start at \$83 per MIPS for a two-year subscription.

- Global Enterprise Management System 2.0 (GEMS), an update to PGP's management console for its firewall and VPN products. The earlier version managed only the Gauntlet firewall, while Version 2.0 includes support for PGP's hardware/software firewall/VPN appliances sold under the PGP e-pliance 300 and 1000 series.

PGP: www.pgp.com

NetScreen, RedCreek aim for more reliable VPNs

Products offer backup when primary connections fail.

■ BY TIM GREENE

NetScreen and RedCreek Communications this week will make separate announcements that address the problem of backing up firewall/VPN sessions in data centers and at small enterprise offices.

NetScreen is announcing software at NetWorld+Interop 2001 in Atlanta to make secure access to data centers more reliable, even when switches surrounding NetScreen's high-speed fire-

wall/VPN devices fail.

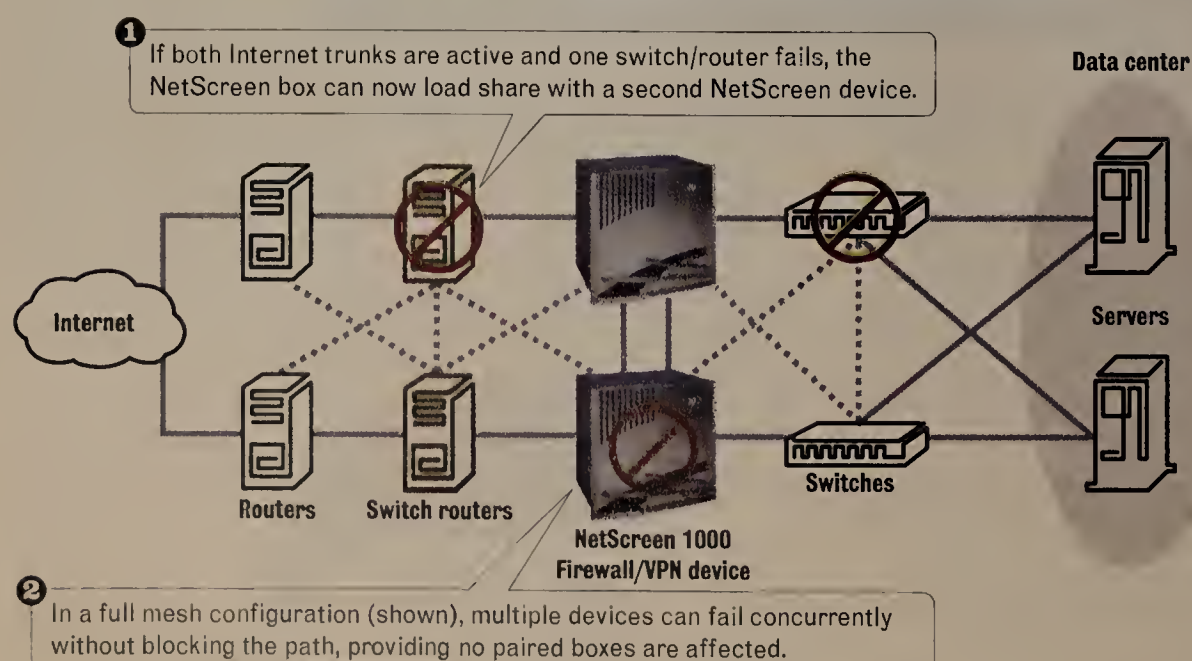
The company's Screen OS 2.7 software release adds the ability for NetScreen boxes to share the load of protecting data-center Internet connections when both boxes are up and running.

Like earlier releases, Version 2.7 also lets NetScreen boxes back each other up if one fails, but can do so in two new ways.

See VPN, page 105

Protecting against data center failures

NetScreen's existing 500 and 1000 firewall/VPN devices support hot standby mode, whereby failure of one box activates the other. A new operating system adds two new redundancy options.



NetworkWorld

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Managed LAN services on tap from C&W

■ BY DENISE PAPPALARDO

ATLANTA — Cable & Wireless is entering the voice-over-IP service arena with two managed LAN offerings that let users gradually converge IP voice and data networks.

The service provider is set to announce its Convergence PBX and IP LAN services this week at NetWorld+Interop 2001. The fully managed service packages will let users integrate voice and unified messaging applications over their IP LANs. The services let users hand over the management and maintenance of integrating their local voice and data networks to the carrier.

Convergence choice

Cable & Wireless is launching two voice and data LAN services this week:

Service	Features	Equipment	Network option
Convergence PBX	Lets users hand over management of their PBX switches, which support voice and data traffic, to Cable & Wireless. Users can use analog or IP handsets on their desktops.	Nortel Meridian PBX switch that supports 16 to 16,000 telephone extensions.	Customers can connect PBX switches to Cable & Wireless IP VPN, ATM or frame relay services for wide-area data support.
IP LAN	A managed LAN service that lets users support voice over IP and unified messaging from desktop to desktop.	Cisco routers. Models depend on size of network.	Customers can connect to multiple sites via the service provider's IP network.

Note: Both services are available in the U.K. and U.S.

Customers that sign up for Cable & Wireless' Convergence PBX service get a Nortel Meridian PBX switch deployed at their

sites. The service provider manages the device. This service is for business users that have an older PBX or are equipping a new

branch office that may not have a voice communications system in place, says Ivor Kendall, a vice president at Cable & Wireless.

The IP LAN service includes a Cisco router that the service

See VoIP, page 105

Metro Ethernet

continued from page 1

the cost is expected to be lower.

"There is every reason to believe that Ethernet services will become very popular," says Lisa Pierce, analyst with Giga Information Group and a Network World columnist. Users want bandwidth flexibility at lower costs, she says.

AT&T is not the first company to offer local Ethernet services. Yipes Communications, Cogent Communications and Telseon offer bargain-basement bandwidth to business users. Cogent, for example, is offering 100M bit/sec access links for \$1,000 per month.

Pricing from long-haul providers is not expected to be as low, however. Large providers such as AT&T will launch Ethernet services and see how the market reacts, Maynard says. "The rates will be lower than OC services, but they won't offer disruptive pricing like Cogent," he says. AT&T won't detail its pricing.

AT&T's pricing may not be as aggressive as Cogent's because of its installed base of SONET users that the new Ethernet service providers don't have to worry about.

"The key benefits of the service is that users hand us an Ethernet signal directly. They don't need SONET equipment or expertise, which gives them a cost savings," says Chuck Lindow, product manager for MIS Ethernet Access. If they have a Gigabit Ethernet interface, customers can upgrade from 50M to 150M bit/sec or

300M to 600M bit/sec quicker than any Optical Carrier service, which would require new cards, he says.

AT&T is looking at Ethernet services in a phased approach, says Jennifer Nisendoff, AT&T's director of data products. "We are using some of the same network elements in the local network, like our multiservice platforms, and we are deploying Ethernet switches," she says. Nisendoff would not identify which ven-

ers, or ELECs. "We are well down this road and have completed agreements with one provider," he says, but he would not name the carrier. The plan is to have "near national coverage as it makes sense."

Other camps

Rival WorldCom has Ethernet service plans of its own. The company has been testing metropolitan area and Internet access Ethernet services for about two

AT&T, WorldCom will work with third-party providers to extend its reach.

Giga's Pierce estimates that WorldCom won't announce any Ethernet services until at least January. Trials always take longer than expected and it's late in the budget cycle for most carriers to get funding for new services. But WorldCom isn't too far behind its competitors.

Sprint, the third-largest telecommunications company, says

wing's fiber backbone. The company is using local Ethernet service provider Telseon to provision metropolitan connections.

Like its competitors, Broadwing would not reveal pricing, but users can expect to save up to 15% compared with SONET services, says Jamie Heinze, director of optical services. Customers will pay a flat fee for the dedicated bandwidth they choose, and that price will vary depending on how many fiber miles the traffic travels, Heinze says.

McAfee.com has signed up for the service and says the difference in price is only one of the benefits.

"I'll have a Gigabit Ethernet port at my front door where I can use as little or as much as I want on a real-time basis," says Doug Cavit, CIO at the Sunnyvale, Calif., security software company. With SONET you have to buy bandwidth in set increments and have to buy equipment each time you upgrade, he says.

McAfee is connecting its data center in Northern, Va., to its data center in Sunnyvale using Broadwing's point-to-point service. Broadwing is deploying Juniper M5 devices equipped with a Gigabit Ethernet card at customer locations to support the service.

The Broadwing service will initially be available in New York, San Francisco, Los Angeles, Chicago, Dallas, Washington, D.C., Atlanta, Seattle, Miami and Denver. The company says it will use third-party local Ethernet service providers to reach additional cities. ■

More cities, more speed

AT&T is introducing its first Ethernet services at NetWorld+Interop 2001 this week. Here are the details:

Service	Features	Availability
Metro Ethernet	Lets business users set up dedicated point-to-point metro-area connections at 50M, 150M, 300M or 600M bit/sec.	Currently in New York. Will be available in Q1 2002 to most of the 68 cities where AT&T has local high-capacity fiber optics.
Managed Internet Service Ethernet Access	Lets users set up dedicated Internet access connections to AT&T's backbone at speeds from 10M to 1G bit/sec.	

Note: No pricing information available at this time.

dors AT&T is using to support the services.

Today both services are only available in New York. AT&T says it's launching the services in a controlled introduction with general availability slated for the first quarter. The MIS Ethernet Access service will be launched in nine more cities by year-end, Lindow says. He says it will turn up in San Francisco next, but would not reveal the other cities.

Like other providers, AT&T is looking to team with third-party Ethernet local exchange carri-

ers, or ELECs. "We are well down this road and have completed agreements with one provider," he says, but he would not name the carrier. The plan is to have "near national coverage as it makes sense."

The company expects the trial to continue for another couple of months. Richardson would not say when the service might be commercially available.

WorldCom will use its existing local fiber infrastructure to support the services, but Ralph Montfort, director of IP access services, stresses that national coverage is critical to success. Like

it doesn't have any formal plans to offer Ethernet services in its metropolitan or long-haul networks, but Broadwing Communications is bullish on the service. Broadwing announced Ethernet service plans at the last NetWorld+Interop conference, in May (see www.nwfusion.com, DocFinder: 5985).

The company is expected to officially launch its point-to-point long-haul Ethernet service Oct. 1. This offering will let business users establish dedicated Ethernet links across Broad-

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EMC takes new aim at midrange storage

Meanwhile, company boosts high-end offerings.

■ BY DENI CONNOR

HOPKINTON, MASS. — EMC this week will announce a new top-of-the-line Symmetrix storage array, but it's the company's midrange box that has caught observers' eyes.

Symmetrix 8230, a box that sits between servers, disk and tape drives, and other storage-area network nodes, holds up to 3.5 terabytes of data and is aimed at organizations looking to deploy storage for individual applications, such as message or database servers.

The box's starting price of \$100,000 might not sound particularly midrange, but a typical Symmetrix system can cost more

than a half-million dollars, and the company's previous midrange offering was more expensive and half as fast.

What's more, EMC says that its 8230 isn't your typical midrange box because it contains all the sophisticated software, such as data replication and availability technology, found in higher-end Symmetrix arrays. The offering is expected to compete with products from Compaq, Dell, Hitachi and others.

"A lot of people like the high-end availability characteristics of the Symmetrix, but until now they have been priced for only the big boys," says Steve Duplessie, an analyst with Enterprise Storage Group.



EMC's midrange Symmetrix 8230 supports up to 3.5 terabytes of data, making it best suited to handle single applications.

"It's a great move in terms of EMC's ability to go in with very high-end product to take midrange market share," he adds.

Whereas EMC is the clear market leader with at least 25% of the high-end market, it is chasing the likes of Compaq and Dell in the midrange market.

Symmetrix 8230 is priced just above what EMC charges for its Clariion arrays, the lower-end systems EMC gained via its purchase of Data General.

While EMC is taking the midrange market more seriously, it's certainly not overlooking the high end.

The company's new 8830 is its highest-capacity Symmetrix ever, topping out at 69.5 ter-

abytes of data vs. the previous high of 36 terabytes. The company also is introducing the 8530 model, which holds up to 17.4 terabytes.

Incorporated into the new arrays will be an increased number of Fibre Channel connections to drives or tape libraries (up to 96 internal connections or 384 external ones).

The boxes also support up to 8,000 data volumes (or logical storage units), twice the number of previous models, and double the number of processors to 80. That additional processing power means end users should be able to access data about twice as fast, the company says.

EMC: www.emc.com

Concord unites fault and performance mgmt.

Version 5.0 of eHealth is the company's first upgrade in more than a year.

■ BY DENISE DUBIE

MARLBOROUGH, MASS. — Joining an industry trend toward merging performance and fault management, Concord this week will unveil a version of its flagship software suite that puts more data for managing networks in one place.

Concord is adding fault management software to its suite, eHealth 5.0, the first upgrade since the unveiling of Version 4.8 in March 2000. Now users can monitor performance and service levels alongside network fault data and alarms, the company says. The software presents all information at one console, where managers can monitor real-time net status and generate reports on historical trends.

From the other side, traditional fault management vendors hadn't dabbled much in performance management until recently, when Hewlett-Packard purchased Concord competitor Trinagy last month, says IDC analyst Paul Bugala. He says other vendors are beginning to recognize that products combining fault and performance may be one of the few areas in which customers will spend their money in a soft economy.

The eHealth software is installed on a dedicated Windows or Unix server and communicates with agents placed throughout a network. The agents collect performance data — and now, network fault information — such as response time, latency and downtime, and deliver them back to a central server, where reports are generated. Users can customize the reports and use the information to make network and application changes.

ADP, a systems integrator for retailers in the truck and automotive industry, signed on as a

beta customer with Concord a few months ago. Dean Bergan, director of network solutions, says his team evaluated the traditional network and system management vendors, but decided to go with Concord because its offering was the most complete.

"When we looked at most other vendors, most of them required significant integration with partner products," Bergan says. "They required that we mosh them all together and try to make them work. But Concord has about 90% of what we need all on its own." Bergan says ADP needed something that monitored faults, delivered reports on trends and ensured service levels were met.

Bugala says it's not uncommon for customers to look to one vendor to provide them with most of their network

management needs.

"Fault management is the center of gravity for network operations, but now users are realizing it's not enough to know if a device is available. They need to prevent all network downtime," Bugala says. "Offering a fault product that works in concert with performance will give the enterprise a simpler way to manage."

But Concord's foray into fault management is still relatively young compared with industry veterans such as HP and Micromuse, says Enterprise Management Associates analyst Dennis Drogseth. He says the convergence of fault and performance management is definitely good for users but Concord's fault product will need to grow to compete directly with the likes of HP.

"It's not an automated root-cause analysis solution," Drogseth says. "But it's a good offering that remains complementary to the traditional fault management products."

Concord and network management software maker RiverSoft in mid-September will offer an integration module to customers who already have RiverSoft and Concord technologies in their networks. The module will help RiverSoft deliver Concord's performance management data by clicking on an event, and Concord users will be able to more quickly isolate the root cause of network degradation with data RiverSoft collects. Concord users can also tap into RiverSoft's network topology mapping technology. Root-cause analysis is a technique for sifting through many fault reports to get at the root of a network problem.

Part of the eHealth suite, Concord's Fault Manager is available now and pricing begins at \$10,000. Also available now, the updated version of Application Response starts at \$20,000, depending on network configuration. The Concord/RiverSoft integration module will be made available to customers Sept. 18, and pricing will start at \$10,000.

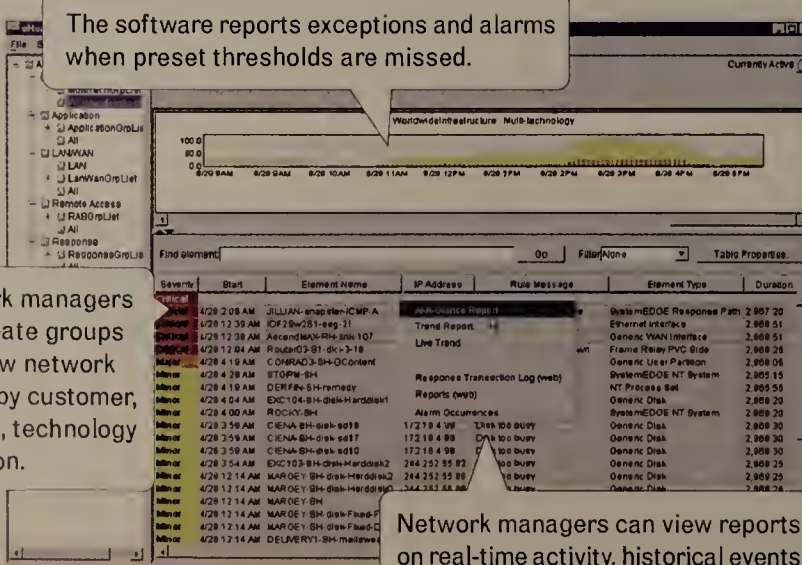
Concord: www.concord.com

Network checkups Concord's eHealth software suite will help users track network performance and fault activity.

The software reports exceptions and alarms when preset thresholds are missed.

Network managers can create groups and view network status by customer, service, technology or region.

Network managers can view reports on real-time activity, historical events and network trends.





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continued from page 1

"metropolitan area."

Sheng Guo, CTO of the State of New York court System, is overseeing the installation of a private, seven-site dense wavelength division multiplexing (DWDM) network connecting courthouses in Manhattan and the surrounding boroughs, as well as Westchester and Nassau counties.

The New York City-area DWDM network is the next phase in CourtNet, the state's OC-3 (155M bit/sec) speed network installed in some Manhattan and upstate New York courts and jails. The system lets judicial hearings be held by videoconferencing, allowing prisoners incarcerated in one part of the state to appear at court hearings hundreds of miles away.

Although the project's total cost is estimated at \$50 million, "CourtNet has a huge payoff," Guo says. "It's really changing how people interact. Just a few years ago, no one even had e-mail. Now we can do video face to face."

Guo says videoconferencing has saved the courts on the costs of transporting prisoners to hearings across the state, which can cost hundreds of dollars for a single trip, when travel expenses and overtime pay for prison guards is factored in.

The DWDM network will be built on a 140-mile fiber-optic ring, and will connect 8,000 court employees in the New York City area and allow the CourtNet video service to be expanded to courthouse campuses in Brooklyn, the Bronx, two locations in Queens, and Nassau and Westchester counties.

An Optera DWDM switch in the court system's Manhattan data center will switch 14 channels, or wavelengths of light, on the ring, providing 2G to 3G bit/sec of bandwidth per campus.

Optera switches attached to the ring at each campus will only transmit and receive their respective channels, allowing other sites' channel traffic on the ring to pass through. Each site will get two to three dedicated channels of light, with each channel representing a 1G bit/sec dedicated link back to the Optera switch in Manhattan. The court system is working with Metromedia Fiber Network, a New York fiber-optics provider, to install the dark fiber ring.

Guo says this network will also

be the foundation for the court system's next project, which is to put the court's multivendor PBX phone system on one IP network.

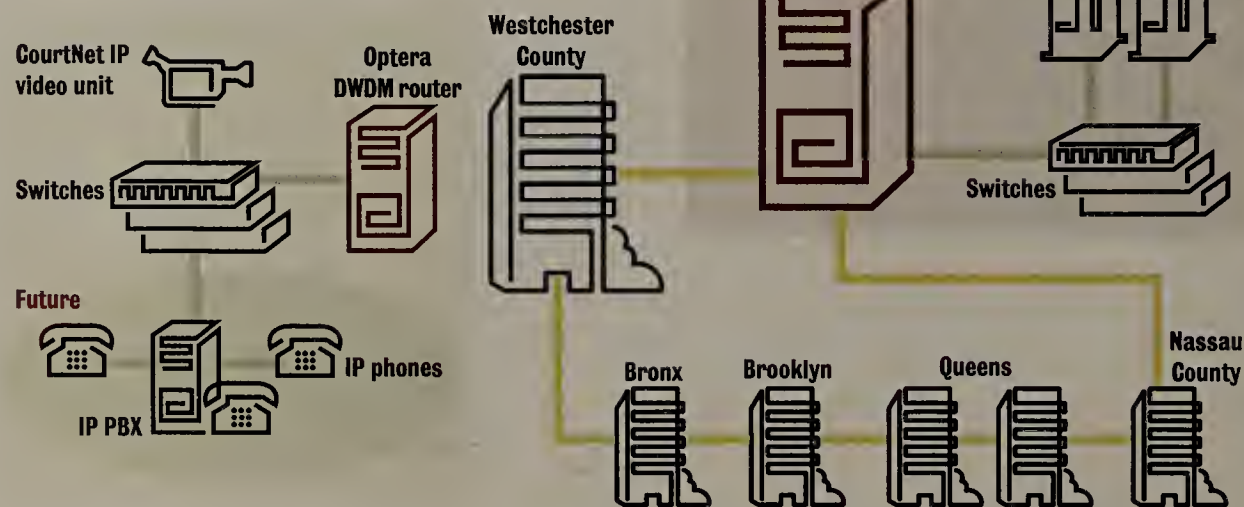
The motivation for the DWDM network was to provision bandwidth in-house, rather than rely on a service provider. Guo looked at some MAN providers that offered metropolitan Ethernet connectivity, but they didn't have the speeds he needed.

"Since we have the dark fibers and we're using our own equipment, the control of the bandwidth is totally up to us," Guo says.

DWDM links New York courts

The State of New York's court system will use dense wavelength division multiplexing (DWDM) technology from Nortel to provide IP video services and multigigabit WAN links to its six court facilities throughout New York City.

Each facility will use a Nortel Optera DWDM router to tie gangs of Ethernet switches to a dedicated wavelength of light on the court's 140-mile, multigigabit fiber ring. Although courthouses only use 2G to 3G bit/sec links today, DWDM makes it possible to scale each location up to 10G bit/sec.



The network supports all data traffic and CourtNet, an IP-based videoconferencing service, which allows judges, attorneys, defendants and inmates to attend hearings. Future plans include adding support for voice over IP.

"If you have the dark fiber, it doesn't matter how much bandwidth you put through it."

Financially sound

Across town at Lehman Brothers, the financial services firm is also using DWDM gear, as well as a mix of Gigabit Ethernet and traditional WAN gear, to connect its offices and data centers in Manhattan and Jersey City, N.J., which support 8,000 employees in the area.

Lehman Brothers' MAN connects five buildings located throughout downtown Manhattan, which are linked with a combination of T-3 lines and Gigabit Ethernet links over leased fiber.

These office networks tie into a data center located at the World Financial Center. Four Cisco ONS 15000 optical transport system

boxes — a pair on each side of the Hudson River — are used to bridge the Jersey City and Manhattan data centers.

"Using DWDM gives us much more bandwidth than a leased line ever could," says John Manville, senior vice president of network services at Lehman Brothers. "It also enables us to use a few dark fibers much more cost efficiently than buying more and more dark fiber circuits from a carrier," which is still relatively expensive.

The firm's backbone supports myriad traffic, including Web

DWDM, Manville says, is that more bandwidth can be added by multiplexing more ports over more channels, to a maximum of 32.

IP routing and link failover are handled by Cisco Catalyst switches that feed into the ONS boxes. While the DWDM technology sounds complex, Manville adds, "What we have now is actually pretty simple. . . . The [DWDM] boxes don't have many features on them." The basic task the optical routers perform is the shuttling of traffic from Point A to Point B.

Much of Lehman's metropoli-

ments, if at all. If the dark fiber was very cheap, maybe it would be a different matter."

Beyond the big city

You don't have to be a global financial institution or a large government agency to string together your own high-speed Gigabit MAN. And you don't have to be in a big city either. Just ask Ted Malos, director of technology for the Ventura Unified School District in Ventura, Calif. With the help of the local cable company, Malos is in the process of wiring together 25 schools and other facilities throughout the district with fiber-based Gigabit Ethernet links.

"We plan to eliminate all our Cisco routers and connect metro fiber right into our switches at each site," he says. "We'll be going Gigabit between the sites, but using off-the-shelf equipment."

By doing this, Malos says, the school district will increase its MAN bandwidth more than 600 times, while eliminating the monthly charges for T-1 circuits, which cost the school \$125,000.

Instead of carrier-class optical gear, the technology used to connect the campuses together will consist of stackable Layer 3 switches from 3Com, specifically the SuperStack III NBX 3300 and 4400, which can also switch at Layer 4. While it's not the most advanced technology, the 3Com equipment "will give us the packet routing features we need to keep campus traffic flowing," he says.

The network now has Cisco routers linking the school district's campuses together over T-1 lines. The opportunity to put in a Gigabit Ethernet MAN for the school district came up when the city renegotiated its deal with local cable providers.

As part of the agreement, the cable company offered to install the fiber-optic cable for the school district at cost. The fiber is owned by the school district, which pays the cable company

With the school district's WAN bandwidth going from 1.54M to 1000M bit/sec, Malos says a whole new set of applications, such as IP video and voice, are now a possibility. A 3Com NBX IP phone system has already been ordered by the school district, and will go live districtwide by November, he says. ■

and database applications, financial modeling and other corporate applications in Lehman's data centers, as well as IP voice traffic for the 1,000 Cisco IP phones and IP PBXs Lehman has deployed in its offices.

EMC storage arrays in both data centers store the firm's trove of financial data and provide backup for each other in case of an equipment failure in one of the two centers.

To handle all this, the ONS 15000s multiplex 10G bit/sec of traffic onto a channel, or wavelength of light, on a single-fiber pair. Lehman's backbone utilization runs around 20% to 30% (or 2G to 3G bit/sec), Manville says, and never exceeds 50%, even during peak periods, such as data backups between EMC storage systems.

The advantage of a private

tan network in Manhattan consists of Gigabit Ethernet links connected with more than 150 Cisco Catalyst 6509 switches.

Manville says the company could have connected the New Jersey data center into the Manhattan network by plugging the fiber connections into two Catalysts on opposite sides of the river. But using straight Gigabit Ethernet without DWDM would have been comparable to building the George Washington Bridge with only two lanes of traffic.

"We could have stuck a dark fiber pair between two 6509s and got one Gigabit between them, and it would have worked fine," Manville says. "But that wouldn't have addressed the EMC [bandwidth] requirements, and it wouldn't have addressed very well the redundancy require-



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3. What is the estimated value of network equipment and services that you specify, recommend, or approve the purchase of? (Please print the appropriate number code on the line next to each product category. Please complete ALL categories A-O.)

- | | | |
|--|--|--|
| 1. ☐ \$100 Million or more | A _____ Large Systems (Mainframes/Minis) | H _____ Internet/Web/E-commerce |
| 2. ☐ \$50 Million to \$99.9 Million | B _____ Desktops (Micros/Laptops/Workstations) | I _____ Intranet/Extranet |
| 3. ☐ \$25 Million to \$49.9 Million | C _____ Mobile (including PDAs, Wireless) | J _____ Networking (including Routers, Switches) |
| 4. ☐ \$10 Million to \$24.9 Million | D _____ Servers | K _____ Storage |
| 5. ☐ \$1 Million to \$9.9 Million | E _____ LANs | L _____ Remote Access |
| 6. ☐ \$100,000 to \$999,999 | F _____ WAN Equipment | M _____ Peripherals |
| 7. ☐ \$50,000 to \$99,999 | G _____ Carrier Services | N _____ Software |
| 8. ☐ Under \$50,000 | | O _____ Service/Support Services |
| 9. ☐ None of the above | | |

4. What is the total number of sites for which you have purchase influence?

(check ONE only)

1. ☐ 100+ 2. ☐ 50 to 99 3. ☐ 20 to 49 4. ☐ 10 to 19 5. ☐ 2 to 9 6. ☐ 1 7. ☐ None

8. Please indicate the Web/Security/LAN/Internetworking/Wireless/Mobile/WAN Equipment/Carrier Services that you are currently involved in purchasing or plan to purchase: (check ALL that apply) A. Currently involved in purchasing B. Plan to purchase

WEB		
A B	A B	A B
☐ 01. ☐ Web Servers/Software	☐ 04. ☐ Web Development Tools	☐ 07. ☐ Web Acceleration/Caching/Load Balancing
☐ 02. ☐ Web Traffic Management	☐ 05. ☐ Web Content Management	☐ 08. ☐ Web Hosting Services
☐ 03. ☐ Electronic Commerce Tools	☐ 06. ☐ Web Collaboration/Groupware	☐ 09. ☐ Other
SECURITY		
A B	A B	A B
☐ 10. ☐ Firewalls	☐ 13. ☐ DES Encryption Tools	☐ 16. ☐ Certificate Authorities
☐ 11. ☐ Anti-Virus Software	☐ 14. ☐ Authentication Tools	☐ 17. ☐ Biometrics
☐ 12. ☐ Private Key Encryption Tools	☐ 15. ☐ Intrusion Detection	☐ 18. ☐ Other
LANs/INTERNETWORKING		
A B	A B	A B
☐ 19. ☐ Fast Ethernet	☐ 26. ☐ Storage Backup (Optical, Disk, Tape, RAID)	☐ 30. ☐ Hubs/Intelligent Hubs/Stackable Hubs
☐ 20. ☐ Gigabit Ethernet	☐ 27. ☐ Network Test/Diagnostic Tools	☐ 31. ☐ Cables/Connectors, Baluns
☐ 21. ☐ Layer 3-7 Switches	☐ 28. ☐ Uninterruptible Power Supplies (UPS)	☐ 32. ☐ Wiring/Fiber Systems
☐ 22. ☐ ATM Switches	☐ 29. ☐ Network Interface Cards (NICs, PCMCIA)	☐ 33. ☐ Net Management Systems
☐ 23. ☐ Routers		☐ 34. ☐ Voice Over IP (VoIP) Tools
☐ 24. ☐ Network Attached Storage (NAS)		☐ 35. ☐ Network Analyzers
☐ 25. ☐ Storage Area Networks (SANs)		☐ 36. ☐ Other Local-Area Network/Internetworking
WIRELESS/MOBILE		
A B	A B	A B
☐ 37. ☐ Wireless LANs	☐ 39. ☐ Wireless LAN Extension Tools	☐ 41. ☐ PDAs
☐ 38. ☐ Wireless/Cell Phones	☐ 40. ☐ Mobile Data Equipment/Services	☐ 42. ☐ Other Remote/Wireless
WAN EQUIPMENT		
A B	A B	A B
☐ 43. ☐ Frame Relay Equipment	☐ 48. ☐ Voice/Video over IP Gateways	☐ 53. ☐ DSUs/CSUs
☐ 44. ☐ Bandwidth Managers	☐ 49. ☐ Modems	☐ 54. ☐ PBXs
☐ 45. ☐ Bandwidth Shaping/QoS Tools	☐ 50. ☐ Cable Modems	☐ 55. ☐ Call Center Tools
☐ 46. ☐ VPN Equipment	☐ 51. ☐ xDSL Products	☐ 56. ☐ Videoconferencing Gear
☐ 47. ☐ ATM Switches	☐ 52. ☐ Diagnostic/Test Equipment	☐ 57. ☐ ISDN Equipment/Services
CARRIER SERVICES		
A B	A B	A B
☐ 59. ☐ Internet Access	☐ 64. ☐ ATM Services	☐ 69. ☐ Wavelength Services
☐ 60. ☐ Private Lines	☐ 65. ☐ Managed Services	☐ 70. ☐ Dark Fiber
☐ 61. ☐ Frame Relay Services	☐ 66. ☐ VPN Services	☐ 71. ☐ Other Carrier Services
☐ 62. ☐ ADSL/DSL	☐ 67. ☐ LAN-Extension Services	
☐ 63. ☐ T-1/T-3 Services	☐ 68. ☐ OC-3/OC-12	None of the above (1-71) ☐ 72. ☐

9. Please indicate the Systems/Peripherals/Software/Applications/Business Services that you are currently involved in purchasing or plan to purchase: (check ALL that apply) A. Currently involved in purchasing B. Plan to purchase

SYSTEMS/PERIPHERALS		
A B	A B	A B
☐ 01. ☐ Laptops/Notebooks	☐ 06. ☐ Fax Servers	☐ 10. ☐ Mainframes
☐ 02. ☐ Desktops	☐ 07. ☐ Remote Access Servers	☐ 11. ☐ Printers
☐ 03. ☐ Intel-Based Servers	☐ 08. ☐ Video Servers	☐ 12. ☐ Enclosures/Racks/Furniture
☐ 04. ☐ Risc-Based Servers	☐ 09. ☐ Mid-Range Systems (including workstations)	☐ 13. ☐ Other Computers/Peripherals
☐ 05. ☐ Print Servers		
SOFTWARE/APPLICATIONS		
A B	A B	A B
☐ 14. ☐ Desktop/Server Operating Systems	☐ 20. ☐ Database Management Systems	☐ 25. ☐ Middleware
☐ 15. ☐ Network Management	☐ 21. ☐ Customer Resource Management (CRM)	☐ 26. ☐ Document Management Tools
☐ 16. ☐ Systems Management	☐ 22. ☐ Enterprise Resource Planning (ERP)	☐ 27. ☐ Site Metering Tools
☐ 17. ☐ Directory Services	☐ 23. ☐ XML Tools	☐ 28. ☐ Software Distribution Tools
☐ 18. ☐ E-Mail	☐ 24. ☐ Desktop Videoconferencing	☐ 29. ☐ Data Warehousing
☐ 19. ☐ Groupware		☐ 30. ☐ Applications Development Tools
BUSINESS SERVICES		
A B	A B	A B
☐ 32. ☐ Application Service Provider Services	☐ 33. ☐ Systems Integration/Consulting	☐ 35. ☐ Other Services
	☐ 34. ☐ Education/Training Services	None of the above (1-35) ☐ 36. ☐

10. Please indicate the platforms that are currently installed/planned: (check ALL that apply) A. Currently installed B. Planned for purchase

NETWORK PROTOCOLS		
A B	A B	A B
☐ 01. ☐ TCP/IP v4	☐ 03. ☐ SNA/APPN/APPN/LU6.2	☐ 05. ☐ NETBIOS/NETBUEI
☐ 02. ☐ TCP/IP v6	☐ 04. ☐ Novell IPX/SPX	☐ 06. ☐ NFS
		☐ 07. ☐ Other Network Protocols
LAN/WAN ENVIRONMENT		
A B	A B	A B
☐ 08. ☐ Gigabit Ethernet	☐ 13. ☐ Token Ring/Token Ring Switching	☐ 18. ☐ D5L
☐ 09. ☐ Switched Ethernet	☐ 14. ☐ Layer 3-7 Switching	☐ 19. ☐ ISDN
☐ 10. ☐ Fast Ethernet	☐ 15. ☐ FDDI	☐ 20. ☐ Frame Relay
☐ 11. ☐ Ethernet	☐ 16. ☐ Fibre Channel	☐ 21. ☐ Private Line T1, T3, OC-3, OC-12
☐ 12. ☐ ATM	☐ 17. ☐ Wireless LANs	☐ 22. ☐ Other LAN/WAN Environment
DESKTOP/SERVER OPERATING SYSTEMS		
A B	A B	A B
☐ 23. ☐ Windows 2000	☐ 28. ☐ Intel Based UNIX	☐ 34. ☐ Palm OS
☐ 24. ☐ Windows 95/98	☐ 29. ☐ RISC Based UNIX (incl. SOLARIS)	☐ 35. ☐ Windows CE
☐ 25. ☐ Windows NT/Windows 2000	☐ 30. ☐ IBM MVS/VM/VSE/ESA	☐ 36. ☐ Other Network Operating System
☐ 26. ☐ Novell (NetWare 5.X, 4.X, 3.X, 2.X)	☐ 31. ☐ OS/400	
☐ 27. ☐ LINUX	☐ 32. ☐ Digital VM5	None of the above (1-36) ☐ 37. ☐
	☐ 33. ☐ Macintosh	

Continued on next page...

5. What is the total number of Servers/Clients installed/planned at your location/in your entire organization? (check ONE box in each column)

SERVERS		CLIENTS	
At Location	Entire Org.	At Location	Entire Org.
A ☐ 1. 50,000+	B ☐	C ☐ 1. 50,000+	D ☐
☐ 2. 10,000 to 49,999	☐	☐ 2. 10,000 to 49,999	☐
☐ 3. 1,000 to 9,999	☐	☐ 3. 1,000 to 9,999	☐
☐ 4. 100 to 999	☐	☐ 4. 100 to 999	☐
☐ 5. 50 to 99	☐	☐ 5. 50 to 99	☐
☐ 6. 10 to 49	☐	☐ 6. 10 to 49	☐
☐ 7. 1 to 9	☐	☐ 7. 1 to 9	☐
☐ 8. None	☐	☐ 8. None	☐

6. What is your scope and involvement in purchasing decisions for network products and services for your enterprise?

A. Scope (check ONE only)	B. Involvement (check ALL that apply)
CORPORATE/ENTERPRISE: 1. ☐ Entire Enterprise/ Multiple Enterprises	1. ☐ Create Network/IT Strategy
2. ☐ Multinational Enterprise	2. ☐ Recommend/Specify Brand
3. ☐ Division/Multiple Divisions	3. ☐ Approve Purchase
4. ☐ Department	4. ☐ Evaluate Products/Services
5. ☐ None	5. ☐ Determine the Need
	6. ☐ None

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7. What is the estimated number of employees in your entire organization/at your location? (check ONE in each section)

A. Entire organization:	B. At your location:
1. ☐ Over 20,000	1. ☐ Over 20,000
2. ☐ 10,000 - 19,999	2. ☐ 10,000 - 19,999
3. ☐ 5,000 - 9,999	3. ☐ 5,000 - 9,999
4. ☐ 2,500 - 4,999	4. ☐ 2,500 - 4,999
5. ☐ 1,000 - 2,499	5. ☐ 1,000 - 2,499
6. ☐ 500 - 999	6. ☐ 500 - 999
7. ☐ 250 - 499	7. ☐ 250 - 499
8. ☐ 100 - 249	8. ☐ 100 - 249
9. ☐ 99 or less	9. ☐ 99 or less

11. Which of the following hardware platforms are installed/planned in your company? (check ALL that apply)

A - Servers	B - Workstations/Desktops/Laptops
1. ☐ IBM (Mainframes)	1. ☐ Sun Microsystems
2. ☐ IBM RS/6000	2. ☐ H-P
3. ☐ IBM AS/400	3. ☐ Compaq/Digital
4. ☐ Compaq/Digital/ Tandem	4. ☐ IBM
5. ☐ Unisys	5. ☐ Dell
6. ☐ H-P	6. ☐ Gateway
7. ☐ Other	7. ☐ Fujitsu
	8. ☐ Other

12. What is the estimated gross revenue of your entire company/institution? (check ONE only)

1. ☐ \$20 Billion or More	5. ☐ \$100 Million to \$499.9 Million	9. ☐ \$4.9 Million or Less
2. ☐ \$10 Billion to \$19.9 Billion	6. ☐ \$50 Million to \$99.9 Million	10. ☐ None of the above
3. ☐ \$1 Billion to \$9.9 Billion	7. ☐ \$10 Million to \$49.9 Million	
4. ☐ \$500 Million to \$999.9 Million	8. ☐ \$5 Million to \$9.9 Million	

13. For which areas outside of the U.S.A. do you have purchase influence? (check ALL that apply)

1. ☐ Europe	3. ☐ South America	5. ☐ Middle East	7. ☐ Canada
2. ☐ Asia	4. ☐ Australia	6. ☐ Africa	8. ☐ None

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Foundry extends server, security pack

IronWare switch software battles DoS attacks and controls server load balancing.

■ BY PHIL HOCHMUTH

ATLANTA — Upcoming software from Foundry Networks could help customers better manage firewalls and Web servers in the event of unexpected or seasonal surges in Web traffic. The software will also stop common denial-of-service attacks at a Foundry load-balancing switch before the attack can

**NETWORLD
+ INTEROP**

affect Web servers or firewalls.

Set to be unveiled at NetWorld+Interop 2001 in Atlanta this week, the latest version of Foundry's ServerIron IronWare switch software can be applied to Foundry's chassis-based ServerIron 400 and 800 boxes, which are aimed at large-scale Web server farms or consolidated enterprise data centers. The ServerIron supports up to 24 Gigabit Ethernet ports and 128G bit/sec of capacity, while the ServerIron 800 maxes out at 56 Gigabit ports and 256G bit/sec of capacity.

A company's Web server administrator could use the Symmetric Server Load Balancing (SSLB) feature in the software to double the load-balancing capacity in a server farm while making failover between switches more reliable. This is done by having both switches actively bal-

ance traffic among multiple servers. ServerIron boxes configured in this "active/active" method can handle a failure in milliseconds instead of seconds. Today, many customers deploy one load-balancing switch and an inactive back-up switch for fail-over protection.

An IronWare feature called Active Square firewall load balancing now lets load balancers share active session information and pass incoming and outgoing traffic through different firewalls. This can double the throughput of firewall packet inspection in a network, the company says.

The IronWare release will also include security features, such as SYN Guard, for cutting off DoS attacks at the switch, instead of a firewall. Also included is a connection rate-limiting feature for capping the number of sessions a firewall or Web server can accept to avoid device

overload and failure — such as increased e-commerce traffic at Christmas or spiking traffic to an accounting server during a businesses' end-of-quarter finance closings.

SYN Guard expands on the SYN Defense feature of previous IronWare versions, which let a ServerIron monitor synchronization (SYN) packets from an incoming client request. SYN packets are sent by a networked device to initiate a TCP/IP transaction with another machine. A commonly used DoS tactic is to deluge a Web server with SYN request packets that the server cannot answer.

A ServerIron using SYN Defense can identify SYN packets sent from a client that are not followed up by an acknowledgement packet from the sender — necessary for a TCP/IP handshake to occur. The switch would then tell the server to drop

See Foundry, page 20

Short Takes

■ **IBM** unveiled a Unix server last week, touting the processors in the pSeries 660 6M1 as IBM's fastest server chips to date. The midrange, rack-mounted server uses two to eight copper-based silicon-on-insulator microprocessors — the RS64 III at speeds of 500 MHz or the RS64 IV at 750 MHz. The p660-6M1 comes with 2G bytes of memory and can be expanded to 64G bytes of memory. It is equipped with 14 hot-plug PCI slots, expandable to 56 PCI slots. IBM priced the p660-6M1 at \$62,000, targeting the server for Web functions and processing Java programs. To save money, the servers can be purchased with processors that are disabled and later activated at the customer's request. www.ibm.com

■ Storage company **McData** acquired **SANavigator** last week for almost \$30 million cash. SANavigator, a maker of storage management software, was a subsidiary of Western Digital. McData customers and partners can use SANavigator software to bolster their storage networks and improve end-to-end management of their infrastructure. SANavigator lets users view the entire storage network from a single interface. www.McData.com

Maxtor appliance boosts online storage and data back-up options

■ BY DENI CONNOR

ATLANTA — Hard disk giant Maxtor is expected to announce this week at NetWorld+Interop 2001 in Atlanta a new high-end network-attached storage appliance that offers fault-tolerance for e-mail archiving, backup and storage aggregation environments.

The 6000, which uses an embedded Windows 2000 platform, scales from 1.9 to 5.7 terabytes, making it larger than a similar appliance from Compaq and smaller than more expensive, high-end boxes from Network Appliance and EMC. It is designed to be able to be used as a replacement for tape for older less critical or archived data or network backups.

Steve Duplessie, an analyst with Enterprise Storage Group, says that the best feature of the NAS 6000 is its price.

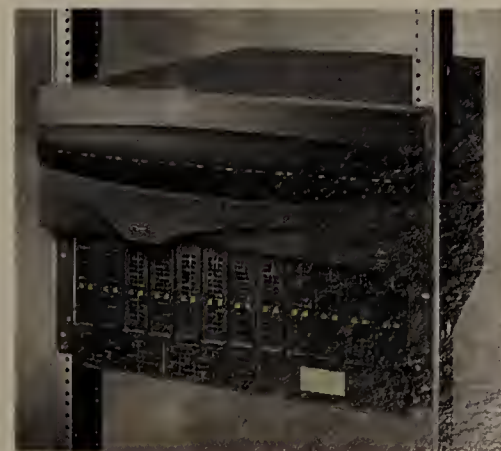
"It's perfect for that data that you want to be accessible but not always online," he says. "Maxtor is using the cost advantages of serial [AT attachment] drives to

totally lower the cost of online storage. It's going to start making the justification for Network Appliance or EMC storage harder."

The NAS appliance, which can be configured as RAID 0, 1 or 5, has hot-swappable drives, power supplies and cooling fans, ensuring uptime and reliability, the company claims. The box fits in a standard rack and in the most com-

plete 5.7 terabyte configuration takes up 21 inches. The NAS 6000 attaches to the network with 10/100 and Gigabit Ethernet connection and supports the Network Data Management Protocol, which allows network backups independent of the network.

The MaxAttach NAS 6000 operates on Windows, UNIX, Linux, Macintosh and NetWare machines, uses Active Directory for managing user permissions and reports to system management software from Computer Associates, Hewlett-Packard and Tivoli. The box can be managed



Maxtor's NAS appliance, the MaxAttach NAS 6000, can handle up to 5.7 terabytes of storage.

from a Web browser.

The box can restore the operating system if it becomes damaged or reboot if the operating system locks up. It has an integrated uninterruptible power supply. A SCSI port comes preinstalled for easy backup to tape.

The NAS 6000 starts at \$30,000 and will be available in October.

Maxtor: www.maxtor.com

IBM releases new entry-level server

Low-cost departmental network IBM eServer x200VL to take on Dell's low-end system.

■ BY ASHLEE VANCE

IBM took aim at Dell last week with the release of a new, low-cost server that IBM claims packs more processing power and storage than similar products from its rival.

The IBM eServer x200VL will come with an 850MHz Celeron processor and a 20G-byte Integrated Drive Electronics hard drive. The system was designed to handle general purpose tasks or operate as a department network server. Pricing starts at \$700, according to IBM.

Along with the hardware, IBM will include its IBM Director software for automating diagnostic and repair functions on its servers.

IBM pitted the x200VL against

Dell's PowerEdge 500SC product, which costs \$706, according to Dell's Web site, with an 800MHz Celeron and a 20G-byte hard drive after a \$100 discount for small-business buyers.

"We can meet Dell's price, but they cannot meet our technology," says Jim Gargan, vice president for IBM's eServer xSeries division.

Director is key

IBM has pushed its Director software across its entire server line and claims that not one of its competitors has put that type of technology in lower-end products.

"Over time, especially in Microsoft environments, you have thread mishandling and memory leaks and things like that," Gargan

says. "As Intel servers age, they basically clog up, forcing an operator to turn them off and then back on."

IBM developed its Director software to help address these types of problems. If an issue can't be resolved without rebooting, the software will indicate to users the best time to shut a system down. The software monitors a system's performance, predicting when a problem is likely to occur and identifying low usage periods when it might be appropriate to turn a server off, the company says.

IBM also announced that its eServer x200 and x220 products will now be available with Intel Pentium III-S processors operating at up to 1.26GHz, with 512K bytes of Level 2 cache.

In addition, IBM released Version 1.1 of its iSeries Connect software, designed to provide a bridge between a company's internal business software and e-commerce exchanges such as those supported by Ariba. Users can publish existing catalogues and business applications developed in-house to business-to-business exchanges via the software, IBM says.

The WebSphere connection

With the latest release, IBM made it possible to integrate iSeries Connect with its WebSphere 4.1 and 5.1 application server products.

The upgraded product also provides a way for companies to set up secure private trading networks with partners, says Ian

Jarman, iSeries product marketing manager. Version 1.1 of iSeries is priced at \$1,000 per processor.

IBM also announced its Fibre Tape Automation Adapter Card Option, which is designed to let SCSI-based storage systems connect into Fibre Channel networks.

Vance is a correspondent with IDG News Services' San Francisco bureau.



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TurboLinux automates server installation

■ BY DENI CONNOR

SAN FRANCISCO — TurboLinux next week will unveil management software that should reduce the cost of deploying and maintaining applications, patches and fixes on Linux servers.

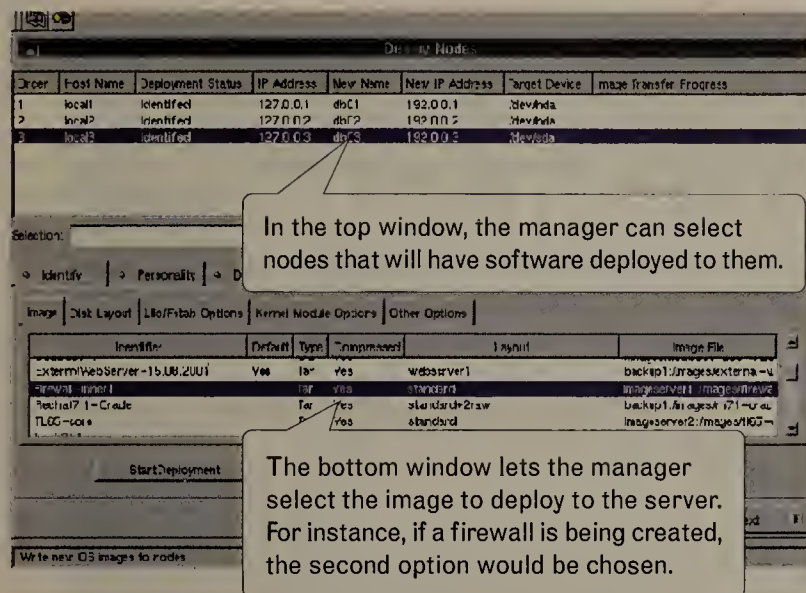
The browser-based PowerCockpit automates the configuration and deployment of Linux servers on the network, letting IT professionals spend time on other more critical tasks.

PowerCockpit identifies servers that need to receive configuration changes, distributes those changes to the servers and installs the Linux operating system, other programs and patches to local and remote servers.

“Doing multiple installs of the same image on a cluster [or any network] is extremely tedious,” says Glen Otero of the Linux

Autopilot

TurboLinux's PowerCockpit software makes it easier to deploy and configure servers.



Prophet, a research firm.

"Being able to describe the type of installation and then

have it automated over several servers is a real time savings. If you can design once, install any-

where, then you can save several configurations to automate their updating," he says.

The software also lets different identities be stored for each server or group of servers, which makes it easier to reconfigure a server as another type of device, such as a load-balancing or caching device. It multicasts instructions to each specified server using a graphical or Perl script interface.

PowerCockpit uses PxE 2.0, which is software that lets a machine be automatically powered on and rebooted before installation and configuration.

PowerCockpit also stores information about each server in an XML repository. With the software, IT professionals can create policies to distribute software with identical personalities or replicate data.

PowerCockpit is similar to Norton's Ghost or Novell's ZENworks for Servers. It layers on top of the Secure Shell and Secure Sockets Layer, thus protecting the security of the system. In Linux, cloning has been isolated to System-Imager, which can be downloaded from www.systemimager.org, and Linux Network Cluster-Worx, which works only with its clusters.

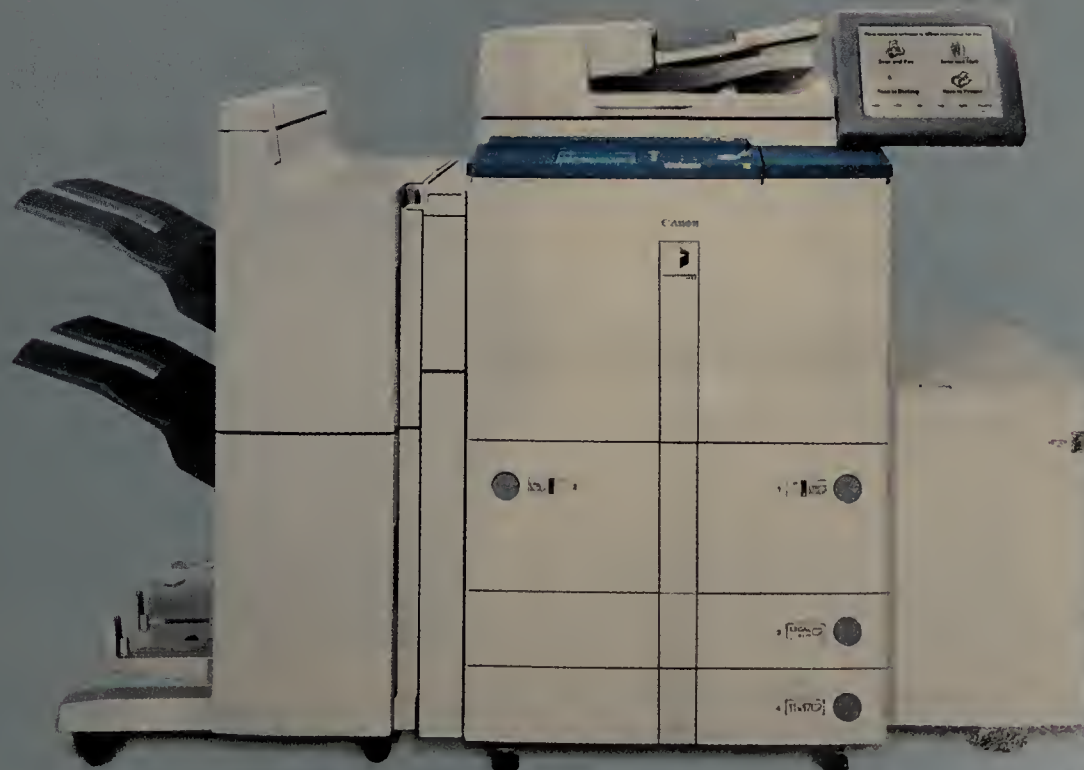
Pricing for the software starts at \$100 to \$200 per node. Site licenses range from \$50,000 to \$100,000.

TurboLinux: www.turbolinux.com

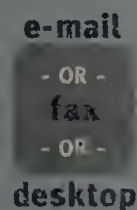
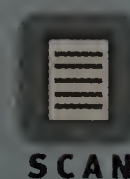


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Dell attacks competitors with low-cost switches

■ BY PHIL HOCHMUTH

AUSTIN, TEXAS — Dell last week jumped into the LAN switching fray with four low-

cost products aimed at small and midsize businesses interested in one-stop shopping for server, PC and network gear.

While Dell's new boxes aren't the most

cutting-edge LAN devices, their prices should attract attention, with some costing as little as \$10 per unmanaged 10/100M bit/sec switch port and around \$100 per

Gigabit Ethernet port.

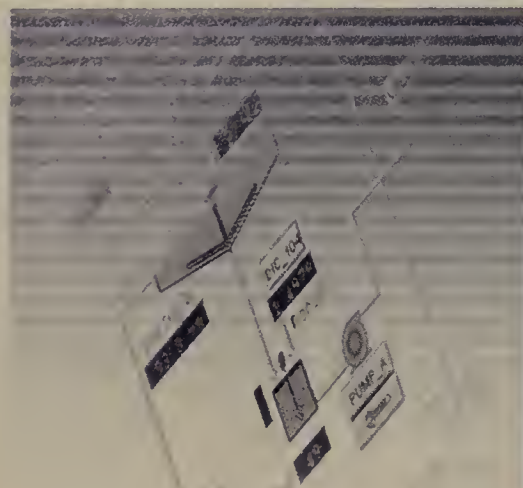
Dell will offer four Ethernet LAN switches under its new PowerConnect product line. The products include two non-managed 10/100 workgroup switches: the 16- and 24-port PowerConnect 2016 and 2024. Dell will also offer a managed workgroup switch with Gigabit uplinks in the PowerConnect 3024, as well as the PowerConnect 5012, a 10-port Gigabit Ethernet over Copper data center switch for connecting servers.

The PowerConnect 2016 and 2024 can provide basic, unmanaged workgroup connectivity. The PowerConnect 3024 and 5012 add management with remote monitoring and SNMP support, as well as Virtual LAN tagging, support for Spanning Tree Protocol and 802.3ae link aggregation. Both switches come with two Gigabit Interface Converter (GBIC) slots for adding copper- or fiber-based Gigabit uplink modules.

The PowerConnect switches, which are manufactured by Delta Networks, a Taiwanese switch OEM vendor, will compete with products from Cisco, 3Com and Nortel — the top three vendors of fixed, 10/100 and Gigabit Ethernet switch ports — as well as lower-end vendors such as SMC, D-Link and NetGear.

The PowerConnect 2016 and 2024 cost \$170 and \$240, respectively. The PowerConnect 3024 costs \$700 and the 5012 is priced at \$1,300. All products are available.

Dell: www.dell.com



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Foundry

continued from page 17

the requests.

SYN Guard goes further by acting as a proxy for a Web server, requiring that the entire TCP/IP handshake occur between the switch and a client before letting the connection be processed by the server. The switch monitors for unfulfilled SYN packets, Foundry says, ensuring that a server is shielded from SYN flood attacks — even distributed denial-of-service attacks, which could have overwhelmed sites using SYN Defense.

Foundry's ServerIron switches compete with products such as Cisco's Content Service Switch product line and Nortel's line of Alteon Web switches, as well as products from CacheFlow, Extreme Networks, Infolibria and Top Layer. The IronWare software for the ServerIron 400 and 800 switches is available now as a free download for IronWare users with an active support contract.

Foundry:
www.foundry.net.com



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HP and Compaq: A good deal for net executives

The acquisition of Compaq by Hewlett-Packard will be significant for the PC networking market. Of course, it will be even more significant for the retail PC market — but not many enterprise desktops are bought at Circuit City or Best Buy.

Evidently a significant number of home use and small-office/home-office computers are bought through retailers, where Compaq and HP brands dominate the landscape, making up more than 75% of what's sold — some say it is more than

90%. This could attract the attention of the Federal Trade Commission, which still needs to approve this merger.

But your interest in this should be caused by the domination of the server market by these two brands. While Compaq has slipped to No. 2 (behind Dell) in total PC sales, it's still No. 1 in the server market.

HP is No. 3 (some say No. 4) in server sales (with IBM and possibly Dell ahead of it), but the HP line of NetServers has been a significant force in the market — consistently winning accolades, consistently chosen as "editor's choice" in comparisons.

Compaq has been a frontline partner of Novell and Microsoft for many years, while HP — although they partner with both network companies — has been more closely aligned with Microsoft in recent years.

It should be interesting to see what, if any, impact the merger has on the Unix market — besides bringing some further consolidation to a market that desperately needs it. Compaq's track record is spotty; and while HP/UX has been around a long time, it's never made much of an impact on the marketplace — no one has ever bought HP equipment to run HP/UX as far as I know.

But it would make little sense to keep both HP/UX and True64 around — and there is no True64 market of which to speak. This might be the best time to do away with both proprietary Unix variants and concentrate on Linux as the operating system for the hardware platforms that form the core of the combined companies' products.

On balance, it looks like a good deal for network managers — HP servers and Compaq desktops from the same vendor. It could foster a move to retail by the likes of Dell or Gateway. The Unix host market is the big question mark — we'll just have to wait to see how that goes.

Kearns, a former network administrator, is a freelance writer and consultant in Austin, Texas. He can be reached at wired@vquill.com.

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Tip of the Week

Online e-book publisher realtimepublishers.com has announced a slew of new deals for free downloads of Windows Server Management books sponsored by some of the leading third-party vendors in the Windows server market. Check out the titles at www.realtimepublishers.com, then follow the links to register for the free downloads.

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In Motion

OPTIMIZE The Value of Content FOR MOBILE USERS

WHAT IS THE VALUE of business-critical content if users can't access it when they want it and how they want it—that is, with their choice of devices? The answer of course, is: Not much, no matter how good the content is.

This is a conundrum faced by many mobile professionals. They are well armed, with an array of IP phones, palm devices, pocket PCs, wireless phones, and so on. But getting corporate and Internet information to these devices has been difficult at best, not to mention costly and cumbersome.

But all that has changed, and mobile productivity may well jump an order of magnitude as a result.

WIRELESS WONDER

The Cisco CTE 1400 Series Content Transformation Engine (CTE) seamlessly and transparently transforms existing enterprise content for display on virtually any mobile wireless device that has a screen and browsing capabilities. Plugged into the network in front of the content servers, the CTE can transform content uniquely for each device in the field—as well as for the Cisco IP Phone—and send that content over the network to the proper device.

With the CTE acting as a sort of universal “decoder ring” between the users and the content they need, revenue-enhancing possibilities abound. For example, salespeople will be able to deliver immediate customer gratification by accessing and delivering vital information on product pricing, availability, shipping, and support right on the spot. This kind of fast service can translate into greater customer retention and improved sales closings.



The sleek and compact Cisco CTE fits into a single space on a rack unit.

Senior executives who typically spend half or more of their time away from the central office will find that their mobile devices can easily request and then display corporate directories and calendars, real-time financial updates, and general intranet access.

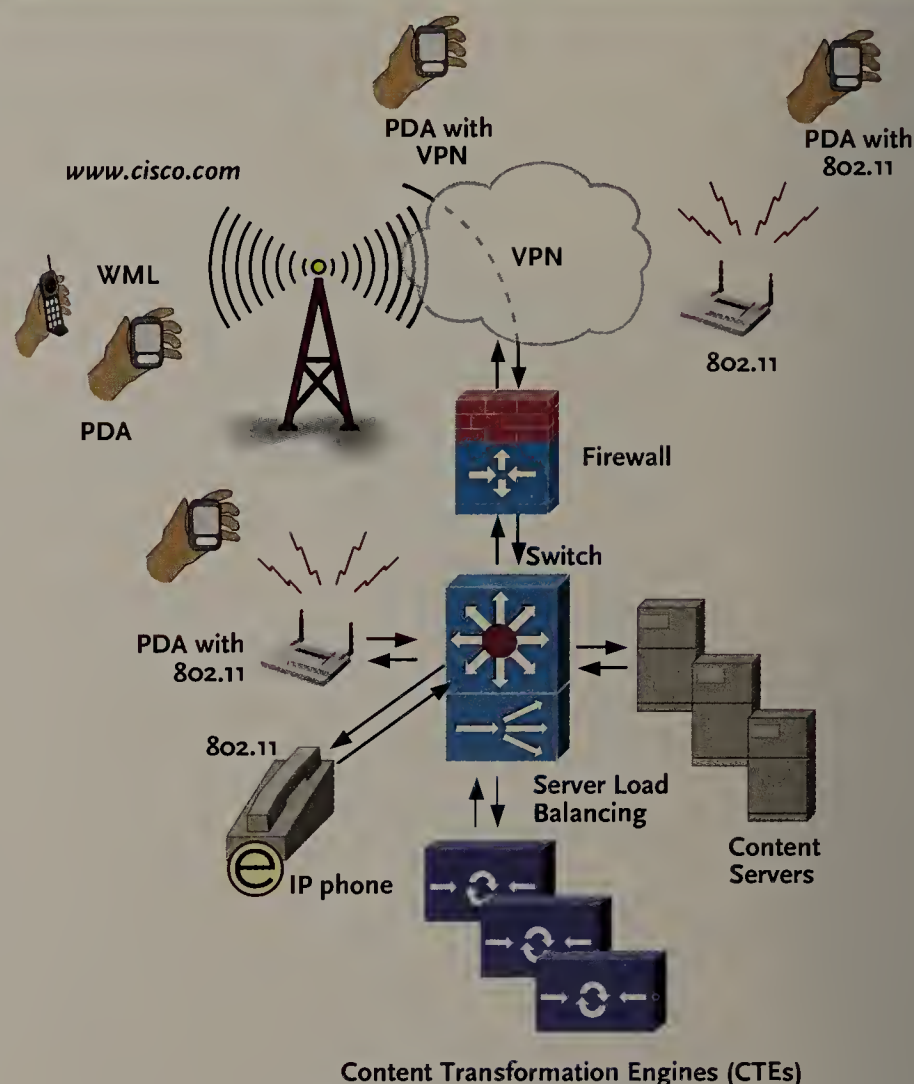
For field service and support staff, the CTE will offer reliable wireless access to case queries, customer updates, and technical information.

“The bottom line for the enterprise is that the CTE can make the company run more efficiently, and improved efficiency is the key to survival today,” notes Seth Redmore, product-marketing manager at Cisco Systems. “The CTE’s ease of use and simple installation and setup also make for lower total cost of ownership and a higher return on investment. We make it easy for users to display the information they need, and when technology is easy to use, we find, it becomes very popular.”

In other words, when an organization provides mobile workers with valuable content on a small screen via a reliable connection, what the organization is really delivering is a competitive advantage.

For the IT professionals that support the mobile workforce, the Cisco CTE is a truly IT-friendly solution. The device slides into a rack unit in a single space and installs literally in minutes. It integrates seamlessly with routers, switches, load balancers, firewalls, and all the other vital parts of an enterprise network.

Content Transformation Engines (CTEs) in Action



KEEPING IT SIMPLE

The CTE requires none of the usual and expensive content duplication or maintenance chores. It works with existing content and doesn't require that content to be altered one bit. Following installation, non-programmers will be able to create device-specific data transformation instructions by clipping and editing content using a simple point-and-click interface.

The CTE automatically recognizes the device making a content request, and then dynamically transforms the content to suit that device's memory and screen requirements. There's no need for expensive skilled programmers, nor are there any monthly hosting charges or continuing contracts for customization as content evolves. You can create transformation rules for a large body of content in a matter of a few hours, and then download these rules to multiple CTEs anywhere in the network.

Of course, the security of sensitive corporate data is paramount to IT staff. That's why the CTE provides a Secure Socket Layer (SSL) connection. Each CTE supports 1400 simultaneous connections and 10,000 user sessions. And should the demand for CTE-based services grow beyond these capabilities, you can simply stack additional CTEs and scale up.

Mobile users have been able to surf the Internet for some time. Now they can access meaningful content as well, thanks to the Cisco CTE. For more information, click on www.cisco.com/go/ctearticle.

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Sendmail launches suite for mainframe

■ BY CAROLYN DUFFY MARSAN

Everything old is new again with Sendmail's recent announcement that its suite of Internet messaging software is available for IBM's mainframes.

Five years after many companies began migrating e-mail applications from mainframes to client-server systems, Sendmail is touting the largest e-mail server on the market by running its software on IBM's eServer z900 mainframe. The twist is that

Sendmail's e-mail gateway and server software run on Linux on the IBM mainframe.

Sendmail says the combination of its software and IBM's eServer z900 can support more than 2 million users. It plans to target companies already running mission-critical applications on IBM mainframes and service providers supporting large volumes of e-mail.

"Mainframes make phenomenally good e-mail servers by way of their architecture," explains Greg Olson, executive vice president of business development at Sendmail. "E-mail servers are I/O bound, need scalability and need rock-solid reliability."

Mark Levitt, research director at IDC, points out that IBM's mainframe-based Profs system was a popular e-mail platform in the early 1990s. "By the mid-1990s, enterprises started moving away from running messaging applications on mainframes," Levitt says. He adds that companies preferred Unix-based servers.

However, companies are now finding the centralized computing model of mainframes more attractive for a variety of applications.

"The challenge is going to be convincing service providers and enterprises that have not traditionally used mainframes that they can be highly scalable, highly available platforms for hosting messaging

Sendmail news

Product announcement at a glance:

Products	• Sendmail Switch • Advanced Message Server • Mobile Message Server
Platform	Linux on IBM Mainframes
Shipped	August 2001
Pricing	Starts at \$4 per user and decreases for higher volumes of users
Information	www.sendmail.com

systems," Levitt says. "For the Sendmail/IBM partnership to be successful, they will need to convince companies to go back to the future and realize the benefits of putting thousands of users on a single server."

Most companies already use a client-server e-mail application such as Microsoft Exchange, Lotus Notes or Novell GroupWise internally. The Sendmail software complements these applications by handling e-mail from customers, suppliers and business partners coming into the corporate network from the Internet.

That's the scenario at L.L. Bean, which is the first customer of Sendmail's software

for IBM mainframes. L.L. Bean will use Sendmail's mainframe software to handle e-mail exchanges with its Web site customers including order confirmation and promotions.

"We've seen a dramatic increase in the volume of [Internet] e-mail as well as an increase in the criticality of that e-mail," says Donna Lamberth, a senior manager for IS at L.L. Bean's Freeport, Maine, headquarters.

L.L. Bean was running the open source version of Sendmail on an IBM RS/6000 server for Internet mail and GroupWise for corporate e-mail. The New England retailer also has an IBM mainframe running its order-entry and inventory-management systems. L.L. Bean needed a more reliable platform for Sendmail and wanted to consolidate as many applications as possible on its existing mainframe.

L.L. Bean will go live with the Sendmail mainframe software this month. ■

Short Takes

■ **IBM** has extended its **WebSphere** middleware to include business-to-business collaboration tools. WebSphere Business Edition encompasses features such as real-time collaboration, advanced order and inventory management, and business intelligence. Available now, WebSphere Business Edition starts at \$125,000 per processor, and an average customer with four processors will pay about \$300,000 after discounts. The development edition currently runs on Windows 2000/NT, and its production platform will include AIX, Solaris and iSeries platforms. Linux will be added to the foray in three to five months, IBM says. www.ibm.com

■ **Tavve Software** last week updated its flagship network management software to include a network performance-reporting tool that collects data from Hewlett-Packard's OpenView or Tivoli Systems' NetView environments. Tavve's **eNMS 2.0 Suite** now features PreView, a performance-reporting application that uses the SNMP databases of OpenView and NetView to obtain the performance data of all configured nodes on a network. PreView then generates reports on network issues such as bandwidth and CPU usage, bottlenecks, errors and trends. Available now, PreView costs \$135 per node. www.tavve.com

VBrick adds Windows Media support

■ BY JASON MESERVE

ATLANTA — VBrick is looking to make the delivery of streaming media easier for users already using TV and DVD-quality video in their corporate networks.

At this week's NetWorld+Interop 2001 in Atlanta the company will announce VBX-coder, a new hardware/software combination for converting DVD- and TV-quality video to the Windows Media streaming format on the fly.

VBX takes MPEG2 video and encodes it into the Windows Media Format for any delivery speed up to 384K bit/sec, making it better suited for dial-up, Cable and DSL users. Each VBX-equipped server will be able to transcode one MPEG2 stream at a time and serve some 1,000 users at a time, depending on hardware configuration

and the bandwidth used per stream.

VBXcoder's release will expand VBrick's reach beyond corporate networks and into Internet streaming. Previously, the company focused on delivering DVD-quality MPEG2 video across a corporate network using IP Multicast to help save bandwidth. Digital TV broadcasts are based on MPEG2.

The problem is streams of digital quality, which typically require at least a megabyte per second of bandwidth, are not suited for streaming across lower-bandwidth Internet connections.

Normally, content providers need to keep multiple copies of the same content to serve different users connecting at different speeds. Without a transcoder in place, users would have to create an MPEG2 version and a Windows Media version of their content. "[With VBXcoder],

users will not need to keep multiple copies of the same content," says Rich Mavrogeanes, founder and president of VBrick. "They can keep content in high-quality MPEG2 and transcode it on the fly to the Internet user at a lower bit rate."

Mavrogeanes says the Windows Media format was selected because Windows Media Player is shipped with every new Windows machine. There are no plans to add support for Real or QuickTime, the other two major streaming media formats.

The company's VBrick devices can be set up next to a Web server in front of the Internet connection. Each device serves a MPEG2 stream to every desktop in the company. Video can come from a DVD player, cable or satellite system.

VBXcoder runs on Windows 2000 and costs \$3,000. It can also be preinstalled on a 1.7 GHz dual-Pentium server that is 1U (1.75 inches) high for \$10,000.

VBrick: www.vbrick.com



More online!

A detailed overview of Sendmail.

DocFinder: 5940

**NETWORLD
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Service Providers: The New Breed

The Application Service Provider model has grown up and become what the IT user really needs these days, namely a Full Service Provider or FSP. Sharing the same monthly subscription or usage-based fee structure as the ASP model, the FSP model provides IT with consulting, application customization and integration, managed services, hosting, and other vital enterprise services.

"It has become increasingly difficult for IT departments to maintain all the connectors between their own custom code and today's enterprise applications, which are constantly being modified," says Tony Summerlin, Vice President of e-Business Strategy at Unisys Corp. "That's where the FSP can help. As you consider your legacy systems, the more you try to integrate new applications, the more the FSP is relevant."

Summerlin notes that the FSP model plays perfectly into the core strengths of Unisys and its rich experience in providing enterprise information solutions, application customization, and data center infrastructure.

Parlaying these strengths and experience into its FSP offerings, Unisys provides a cost-effective way to improve time-to-market of business-critical applications.

For more information about this exciting new generation of service provider and end-to-end platform independent services from Unisys, click on www.unisys.com/e-biz/FSP today. www.aheadforebusiness.com

'NET
INSIDER

Scott
Bradner



A couple of weeks ago in this publication, Winn Schwartau pointed out the stupidity of companies trying to invent their own encryption technologies in a column headlined "To hell with proprietary encryption algorithms" (www.nwfusion.com, DocFinder: 5930). This is a good column, but he only covered part of the stupidity — the stupidity he did not cover is legally mandated.

President Clinton signed the Digital Millennium Copyright Act (DMCA) into law Oct. 28, 1998 (a copy is available at www.eff.org/ip/DMCA/hr2281dmca_law_19981020_pl105-304.html).

The law prohibits "any technology, product, service, device, component, or part thereof, that ... is primarily designed or produced for the purpose of circumventing protection afforded by a technological measure that effectively protects a right of a copyright owner."

By outlawing tools for circumventing protection, it is also outlawing tools researchers use to test security systems. The

Legally mandated stupidity

only way to know if an encryption system works is to try to break it. But having software that could be used to do this is outlawed by the DMCA.

So if someone stumbles on a hole in some security system that could conceivably be used to protect some copyrighted material — that covers just about all security systems — that person cannot report the problem without opening himself or herself up for prosecution for possession of the tools used to find the hole.

In effect, this law says that when a company or organization goes against Winn's good advice and hires self-proclaimed crypto-experts to create a proprietary protection scheme and that scheme turns out to be as effective a barrier as wet tissue paper, no one can tell them about the vulnerability without risk of arrest. This law mandates ignorance. This makes about as much sense as outlawing reporting on deaths that occur during drug trials. In effect, the law mandates crappy security.

And we have recently seen a lot of security is not as good as inventors originally thought. The list is getting longer by the day: DVDs, 802.11 Wired Equivalent Privacy, most watermark schemes, Adobe e-books and, as recently reported, maybe even Microsoft's e-books. Who knows what other systems have been broken but not reported on because of the threat

of the DMCA?

Security is hard. It is very hard for a developer to find all the holes in a design or implementation (just ask Microsoft!). Making it illegal for people to report vulnerabilities does not add to security. (If that sounds like a reach from the DMCA, see www.interesting-people.org/200108/0189.html.)

If you implement security-related software, the DMCA mandates that you stay in the dark if someone manages to break your security, on purpose or by accident. It mandates that no one but the bad guys know about vulnerabilities. It mandates that U.S. companies create and use poor security on the Internet in the face of concerted attacks from many parts of the world. This is breathtakingly stupid.

It may also be an unconstitutional abridgement of free speech — time and the courts will tell. Meanwhile, rest well, knowing that the U.S. government is protecting the ability of the bad guys to exploit holes in crappy software.

Disclaimer: Harvard is not associated with anything crappy, so the above must be my own opinion.

Bradner is a consultant with Harvard University's University Information Systems. He can be reached at sob@sobco.com.

MicroData monitors Exchange e-mail

■ BY JOHN FONTANA

The volume of e-mail has grown so large in many companies that IT can't even guess what passes in and out of corporate mailboxes.

But, unlike the old adage, what IT executives don't know can hurt them.

With that in mind, MicroData last week released Cameo 2.0, an auditing tool for Microsoft Exchange that tracks the content that leaves and enters messaging servers.

Cameo uses a set of customized policies and word lists to examine mail as it passes on the wire. If it finds anything that violates a stated policy, it logs the traffic and e-mails a notification to a designated recipient, such as human resources.

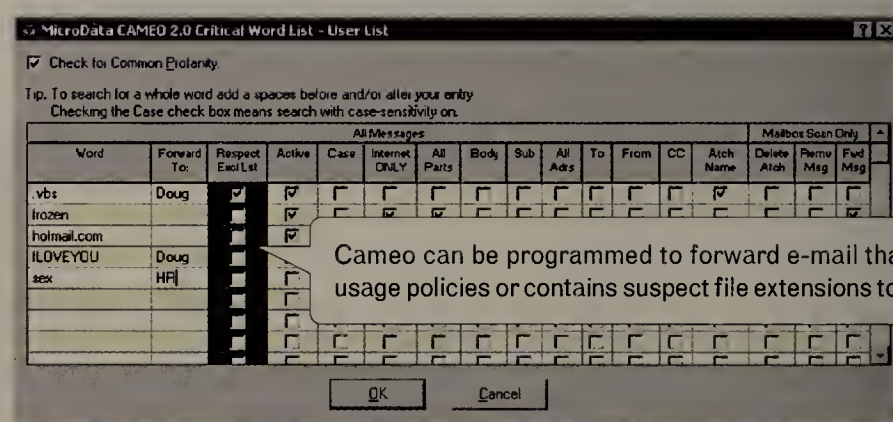
"We have a lot of sensitive information being passed, and we need to know what is going in and out of our mail system," says Gregory Thomas, director of network operations for Managed Healthcare Associates, a group-purchasing agency. "No one incident can hurt us, but we want to gather information and see what is happening in our e-mail traffic."

Thomas says he chose Cameo over competing products such as GFI's Mail Essentials and Baltimore Technologies' MimeSweeper because he did not have to install software on his Exchange server.

"We have a heavy enough load with users and virus protection that we don't

Checking the mail

Microdata's Cameo lets users customize a list of words and attachments to search for when tracking e-mail content in and out of a corporate net.



want anything else on the server," Thomas says. The monitoring software installs on a workstation.

But while Cameo can audit traffic, it does not automate the blocking of e-mail. MicroData plans to release a Simple Mail Transfer Protocol filtering tool next month that will provide blocking.

Cameo 2.0 also features Reconnaissance Engine, which can search the inboxes on the Exchange server. The feature can aid in catching viruses lying dormant after virus updates have been made, and can be used to find offending mail after policies have been updated.

"This capability recognizes the fact that

there are things that I know today that I didn't know yesterday," says Glenn Mores, vice president of MicroData.

Next month, MicroData will release another Reconnaissance tool that can search every folder in Exchange, not just in-boxes.

Also new in Cameo is a 200-word search engine. Users can go beyond the threshold, but searching every e-mail for hundreds of words can present performance issues, according to Mores.

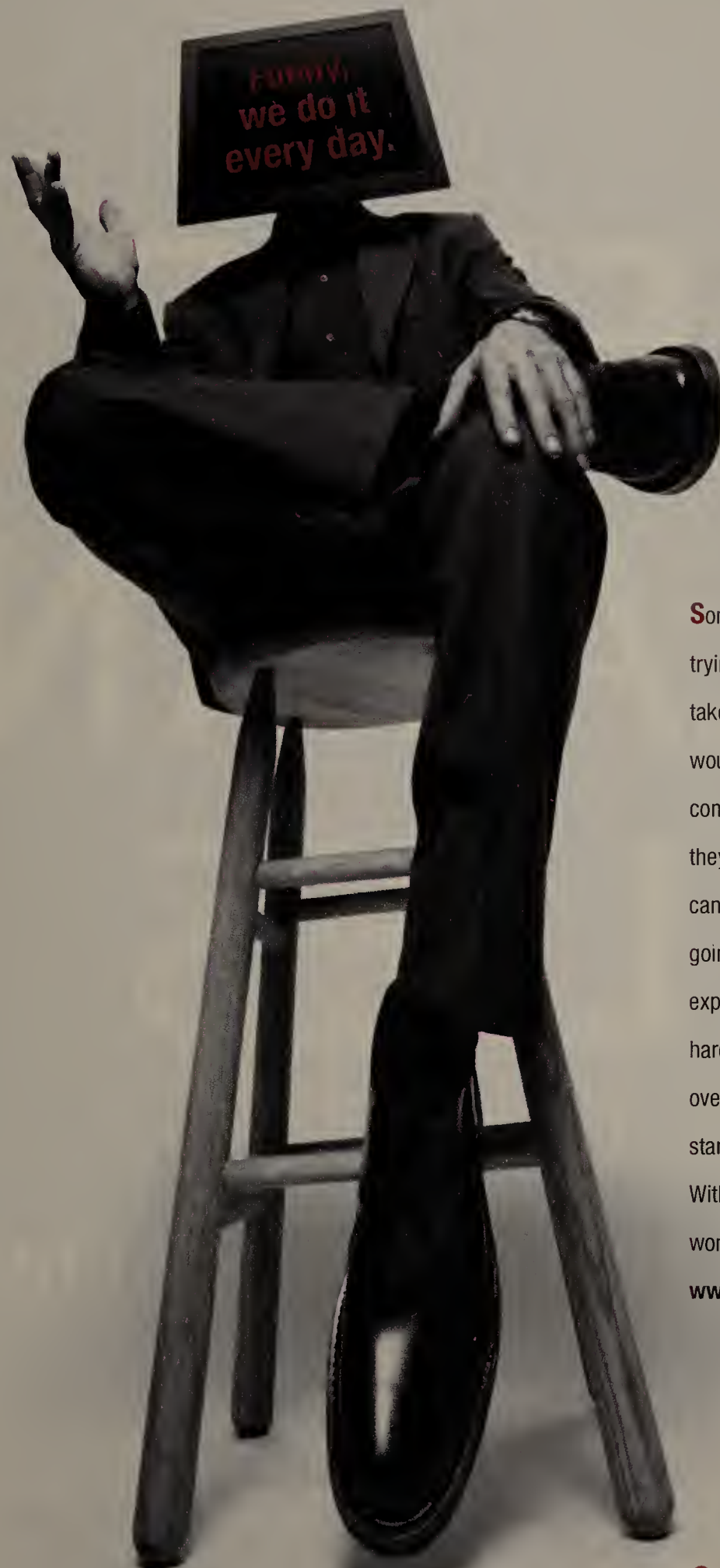
MicroData's Cameo 2.0 is available now and is priced per user. The base installation with 1,000 user licenses is \$2,700. An additional 5,000 licenses is \$9,800. ■

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THE STRAIGHT GOODS ON APPLICATION SERVERS.

Let's start with a little unvarnished truth: We are here to advocate your acceptance of the Sybase Enterprise Application Server 4.0 (affectionately known as EAServer) as the singular de facto standard for your enterprise. This is, after all, our own advertisement.

That said, we promise to tell the truth. We won't distort any of the facts. We will, however, challenge some common misrepresentations and distortions.

"WE'RE MORE J2EE THAN THE OTHER GUYS."

We hear this one a lot. We assure you it is pure nonsense. It's akin to being a "little bit pregnant." You are or you aren't. The same is true with standards. It's either/or. Yes or no. Utterly binary.

For the record: Our EAServer is 100% compatible with J2EE. In fact, we were among the very first application servers to be so certified. We also support C and C++, COM, CORBA, and of course, our own PowerBuilder.

You simply won't find more comprehensive support for the leading technologies and applications most prevalent in e-Business today.

"AN APP SERVER IS ALL YOUR e-BUSINESS NEEDS."

Pure delusion. True, an app server can be thought of as the integration engine driving your e-Business.

But, it's still just one component of your e-Business. And just one. Let's not forget the development tools, the adapters, DBMS solutions, wireless servers and a

host of other components. And here's the crunch: the ability to integrate them.

Anything less simply won't carry you into the future. Sybase provides all these components. Of course, EAServer runs as the integration engine unifying these components into your company's infrastructure.

"IT'S NOT MY FAULT. IT'S THE OTHER GUY'S FAULT."

You've heard this one before.

It's the line that inevitably follows the claim, "It's not really important that our application server doesn't give your team an Integrated Development Environment. You can just pick the tools you need and add them on."

Sadly, you know what happens when you swallow that advice.

Yes, you end up the victim of the Great Finger-pointing Contest. It's a game you can only lose. No matter what.

Thankfully, our EAServer comes complete with its own IDE. So the only fingers you'll see will be busily and happily generating code.

"IT'S OUR WAY OR THE HIGHWAY."

This is usually couched in somewhat softer terms. Something like this: "Let's start fresh. Get rid of everything you've got. Make the switch over to our stuff. And welcome to the New World." What this always translates into is one great,

ugly and brutish migration nightmare. Avoiding the horror of this is one of the very best arguments in favor of EAServer.

Not only do we guarantee that we will make all of your systems work together, we'll show you how you can migrate to your new technologies without disrupting your current systems. Absolutely no pain. Lots of gain.

"OUR BENCHMARKS MIRROR YOUR REALITY."

What happens in a carefully set-up study to prove a marketing claim is the marketing claim gets proven. It's not rocket science.

We do benchmarks, too. We just got some back that say our application server is faster than the best-selling app server in the business-to-consumer market. What's the real impact on your business? We don't know. But it's reason enough to have a little chat.

GET THE WHOLE TRUTH. OR AT LEAST OUR SIDE OF THE STORY.

We believe EAServer deserves your consideration. We won't stretch or distort facts to convince you of our viewpoint.

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NetworkWorld

REVIEW

Put MOM to work

**We recommend
Windows-centric
shops take
a close look
at MOM**

Microsoft's Operations Manager can keep a watchful eye on your Windows servers.

■ BY BARRY NANCE, NETWORK WORLD GLOBAL TEST ALLIANCE

Your job is to keep 60 critical Windows 2000 server computers healthy. Those servers run core business automation software for your company. How can you monitor those servers on a 24-7 basis? Posting three shifts of 60 human sentries each certainly isn't an option, but having Microsoft's Operations Manager around is. MOM will keep your network in line.

Last year's review of monitoring and alerting software tools (www.nwfusion.com, DocFinder: 5826) looked at nine products that detect and reveal server and network problems. MediaHouse Software's ipMonitor 6.0 won the competition. However, another vendor that fared well in the review with its AppManager 3.4 tool, NetIQ Corporation, licensed its monitoring technology to Microsoft.

To the base NetIQ software, Microsoft and NetIQ added KnowledgeBase article links, a Microsoft Management Console (MMC) interface and rule-based filtering. The result is the recently released MOM 2000. Microsoft claims MOM offers comprehensive event consolidation, performance monitoring, useful reports and various kinds of alerts to companies that use Win 2000. To see how MOM stacks up, we put her to work in our lab (for details, see www.nwfusion.com, DocFinder: 5933).

MOM is less an "operations manager" and more a

monitoring and alerting tool, albeit with some brains. Moreover, MOM denotes "Message Oriented Middleware" to many people, which makes Microsoft's use of the acronym confusing.

Product-naming issues aside, our tests showed that MOM does an intelligent and effective job of filtering and presenting Windows server log entries, performance data and registry modifications. The KnowledgeBase explanations that MOM offers are sometimes verbose but nonetheless informative and helpful. We found specifying corrective actions in MOM scripts and integrating MOM with business applications to be easy and painless. On the other hand, we wish MOM had been able to monitor IP-addressable network devices, as ipMonitor does, and we suspect MOM's platform neutrality will never extend beyond its ability to process Unix Syslog protocol event streams.

Standing guard

Using scripts that you write or acquire in the form of management packs from Microsoft or NetIQ, MOM's agents review event logs, performance data, Windows Management Instrumentation events and even SNMP traps. Don't plan to use MOM in place of an SNMP-based network management system, however. Its forte is Windows event logs and performance data.

When it detects a problem, MOM can alert you via e-mail, a pager call or SNMP trap. You can also instruct MOM to take a corrective action, such as launching a program or rebooting a server using MOM's BASIC-like script language.

Integrating MOM with a business application is as simple as having the application insert entries in the Windows event log and having MOM watch for those entries. The management packs that Microsoft supplies with MOM contain scripts for monitoring the operating system and basic operating system services such as Distributed Transaction Coordinator, Dynamic Host Configuration Protocol service, DNS, Windows Internet Naming Service, Active Directory, Internet Information Server, Message Queue, Routing and Remote Access Service, Transaction Server, Windows

2000, Windows NT 4.0, Windows Terminal Server and Systems Management Server. For a fee, Microsoft offers additional management packs for Back Office and .Net applications. Microsoft and NetIQ promise they'll produce other management packs in the future.

MOM has a scalable three-tier architecture of agents, the central console and a relational database. MOM's central logic needs a nondomain controller computer running Win 2000 with Service Pack 2, while agents can run on NT or Win 2000. The default database is a Microsoft Access file, but Microsoft suggests using SQL Server 2000 for monitoring more than a few servers. Once you've installed agents on your servers, the agents update themselves automatically when you create new script rules or install a new version of the agent on the central MOM server.

The user interface is the MMC, and MOM can generate read-only Web page report snapshots. The graphical reports show server status and availability; performance trends; and resource utilization (such as disk space usage). Thoughtfully, Microsoft and NetIQ designed the error-notification window where you can leave notes for yourself or other administrators. Manipulating the interface to configure specific thresholds for alerts (such as "Warn me if CPU utilization remains above 75% for longer than 5 minutes") takes just a few simple steps.

Installation is straightforward. The clear, comprehensive documentation consists of a Windows help file and a set of Acrobat PDF files.

Like MediaHouse Software's ipMonitor, MOM has the ability to monitor Windows-based servers, alert you to problems and take corrective actions. MOM's script environment is superior, but ipMonitor additionally tracks network node availability by pinging IP-addressable devices and polling them via SNMP to collect status information. MOM only has a limited "HTTP ping" for monitoring Web servers. MOM is also more expensive than ipMonitor. We recommend you look closely at MOM if your company is highly Windows-centric and already has a separate tool for monitoring network node connectivity.

Nance, a software developer and consultant for 29 years, is the author of Introduction to Networking, 4th Edition and Client/Server LAN Programming. You can contact him at barryn@erols.com.

Net Results

Microsoft Operations Manager 2000

3.8
RATING

Company: Microsoft, (800) 426-9400, www.microsoft.com **Price:** \$850 plus a \$950 fee for each additional management pack.

Pros: Intelligent filtering of events; easy-to-use BASIC-like language. **Cons:** Likely to remain a Windows-centric tool; high cost.

What's the score?

Operations Manager 2000

Monitoring 20%	4
Notification 20%	4
Corrective action 20%	4
Reports 15%	3
Management 15%	4
Documentation 5%	3
Installation 5%	4
TOTAL SCORE	3.8

Individual category scores are based on a scale of 1 to 5. Percentages are the weight given each category in determining the total score. ■ **Scoring Key:** 5: Exceptional showing in this category. Defines the standard of excellence; 4: Very good showing. Although there may be room for improvement, this product was much better than the average; 3: Average showing in this category. Product was neither especially good nor exceptionally bad; 2: Below average. Lacked some features or lower performance than other products or than expected; 1: Consistently subpar, or lacking features being reviewed.

Global Test Alliance

■ Nance is also a member of the Network World Global Test Alliance, a cooperative of the premier reviewers in the network industry, each bringing to bear years of practical experience on every review. For more Test Alliance information, including what it takes to become a member, go to www.nwfusion.com/alliance.



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Special Focus

CORPORATE PRODUCTS Trying to appease skeptical IT managers.

P2P beginning to make its corporate play

■ BY JOHN FONTANA

More than a year after the peak in hype about peer-to-peer networking, the technology is breaking away from its ugly association with Napster and starting to find a foothold in corporate applications.

Early adopters are starting to focus less on the technology and more on the software created with it, most notably collaboration and content-management products.

Peer-to-peer in its purest form involves two client PCs talking to one another without a server in the middle. Hybrid forms of peer-to-peer use a server as a sort of directory for clients to find one another.

But IT executives are still cautious over lingering infrastructure peer-to-peer issues related to security, management, performance, privacy, interoperability and standards.

With some 300 vendors now touting peer-to-peer as an architectural underpinning, there is need for caution. But vendors such as Groove Networks, NextPage, Endeavors, Oculus, LiquidNet and WorldStreet are trying to ease customer fears with their products. Converts are being found in military and government circles, in the financial industry, and in publishing and consulting.

"I don't care if the technology is rubber bands and bailing wire or peer-to-peer, the beauty of what we do

[with peer-to-peer technology] is being able to manage relationships and data," says Rob Norton, vice president of Delaware Investments, a Philadelphia investment management firm. Norton uses WorldStreet Net, a collaborative application for the financial industry that creates a "web of trust" between peers. For Delaware Investments, those peers are Wall Street research firms.

WorldStreet's Package Router lets Norton filter out the information he wants and have it delivered through a host of standard applications such as Microsoft Outlook and Office, specialized financial applications and even mobile devices. It's a peer-to-peer, publish-and-subscribe model.

"You're extending your network, so that raises a lot of security concerns with us, but WorldStreet has satisfied those concerns," Norton says. "We are better able to establish contacts with people we know and trust and that we want information from."

That is a 180-degree turn from many commercial peer-to-peer applications that allow sharing between any peers on a network. That model has already been rejected in the enterprise.

"IT needs to take a nonjudgmental, nonhistorical

view of peer-to-peer and understand what is coming," says Mike Neuenschwander, an analyst with The Burton Group and the author of the consultancy's recent report "Commercial Peer-to-Peer: Alternative Architectures for E-Business Networks."

Neuenschwander says there are "a lot of things to learn from peer-to-peer engineering that can be added into products. The e-mail you receive could include a URL that would pull an attachment off the hard drive of the sender instead of having to store that in your e-mail system."

Grafting peer-to-peer onto current products is leading some to explore the technology not as a replacement, but as an extension.

Groove Networks this month will introduce its BOT Architecture, which lets users bring back-end systems into the peering relationship. The company's Groove

tomers involved in closings, proposals and bankruptcy.

Others voice concerns about scalability of complex webs of peers, security, privacy and management.

Vendors such as Groove, WorldStreet and NextPage, which develops a content management product, have tools to manage deployments and users. All address security with encryption. Endeavors Technology develops a document-sharing product called Magi that uses key pairs based on X.509 certificates for secure authentication and has built an access-control feature based on "buddy lists" between peers.

"The enterprise hurdles don't seem to be the technology, they are cultural and based on perception," says Robert Hegarty, an analyst with The Tower Group. He says most of the perception is based on the open playing field deployed by Napster.

But another pressing issue is interoperability. No peer-

to-peer products work together in a standard way.

Standards efforts are under way from Sun with its JXTA project, a set of open source peer-to-peer protocols, and the Peer-to-Peer Working Group, started a year ago by Intel. Both efforts, however, have a long way to go and will not influence the industry in the short term, experts say.

But some think the standards may come from a different source — Web services. The Web services model is about standards-based integration of enterprise systems.

"The differences between peer-to-peer and Web ser-

vices at the architectural level is fairly trivial," says Clay Shirky, a writer and consultant who will deliver the opening keynote at The O'Reilly Peer-to-Peer and Web Services Conference on Sept. 18 in Washington, D.C. "So far, peer-to-peer hasn't made any assumptions about standards, unlike Web services, which is all about standards-based interoperability."

Shirky says peer-to-peer standards may very well "piggyback" on the Simple Object Access Protocol (SOAP) and other Web services standards. SOAP is an XML-based mechanism that allows computers to exchange messages and use each other's services.

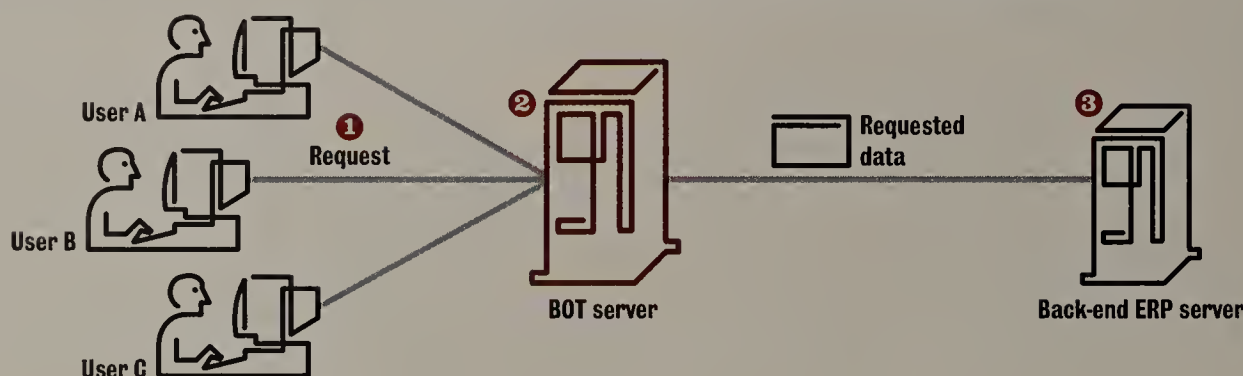
If that is the case, companies beginning to build Web services architectures around products from Microsoft, Sun, IBM, Hewlett-Packard and others may be laying the foundation for peer-to-peer adoption.

But until then, corporate users will have to keep on their toes.

"The enterprise needs to understand where the choke points remain in the technology or they may get into some things that they will regret," says Tim O'Reilly, founder of publisher and conference planner O'Reilly and Associates. ■

P2P advancements

Groove Networks is going after corporate customers with peer-to-peer technology it calls BOT that will let users share data and back-end applications.



1 User A invites a BOT agent, which resides on a BOT server, into a shared space with users B and C. In this example, the agent is designed to retrieve an inventory record in a back-end enterprise resource planning (ERP) system.

2 The BOT server, acting as a peer-to-user device, retrieves the record and distributes a copy to users A, B and C, alleviating the need for each to pull the record from the back-end system. Users A, B and C manipulate the record, which is updated on each peer, including the BOT server.

3 The BOT server files the new record, eliminating the need for each peer to update the record individually, thereby reducing network traffic.

product lets peers share data and applications.

John Wollman, senior vice president of Alliance Consulting Group, is using BOT agents to build a training application that teaches people how to use Groove. The BOT agents grab the training material from a database, create a Groove shared space, and take the user on a guided instructional tour of Groove.

"The BOT [agent] acts like a person," Wollman says. It also can invite in other participants to answer any question the trainee has.

While these early adopters are pushing the envelope, they are still outnumbered by skeptics. Wollman says Alliance has no plans to use peer-to-peer to replace its content-management systems.

Others say the technology is mostly unproven and therefore not an option.

"We are testing all sorts of collaboration technology, but we are not testing peer-to-peer," says Norma Closs, vice president and division manager of Wilmington Trust. "To maintain our trust status we have to have the most up-to-date security. We are regulated."

Wilmington Trust runs a Web-based collaboration product called eRoom to share documents with cus-

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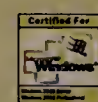
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NetWorker

■ PRODUCTS, SERVICES AND STRATEGIES
FOR TYING TELEWORKERS TO THE ENTERPRISE

Short Takes

■ In a step that should help the federal government reach its goal of sending 25% of its work force home over the next few years, the U.S. General Services Administration and the Office of Personnel Management last week launched a telework Web site (www.telework.gov) for federal employees. The site provides news and policy information, self-help guides for teleworkers and their managers, and links to related telework resources such as policies of specific federal agencies, a telework FAQ and directory of telework centers.

■ A recent survey conducted by the online career exchange **Technies.com** revealed that 96% of technology professionals want to work from home at least a few hours per week, and 39% said they'd even take a pay cut to make it happen. The most popular reasons respondents cited: to avoid the commute and control their own hours. Interestingly, of the 48% of tech professionals teleworking now, 32% are entry-level workers, compared with 67% who have 10 or more years of experience.

■ Need to set up a wireless home network from scratch? **Agere Systems** last week introduced a series of kit versions of its 802.11b network products. Kits include an RG-1100 Broadband Gateway or AP-500 access point; and either a Universal Serial Bus or PC card client adapters or both, depending on your needs. Prices range from \$349 to \$579. **Agere Systems:** www.orinoco.wireless.com/

■ In conjunction with the launch of its new mobile technology, **PeopleSoft** announced partnerships with **IBM** and **Research in Motion**. PeopleSoft Mobile Agent uses IBM's DB2 Everyplace as the local data store, and lets PeopleSoft 8 users access and synch data on BlackBerry wireless devices.

Cisco's in the house

Verizon partnership and SOHO firewall signal new home-office focus.

■ BY TONI KISTNER

Encouraged by strong market forecasts and the success of its telework program, Cisco has announced two initiatives geared to the home-office market.

This week the company will announce a partnership with Verizon to deliver remote access hardware and broadband services to the enterprise telework market. As part of its corporate home-office program, Cisco will supply 800 Series and uBR900 Series routers, and Verizon will provide DSL services to home offices. In states beyond Verizon's 30-plus state reach, partner TManage will provide broadband provisioning via service provider partners, as well as telework best practices.

For Verizon, the deal means it can now offer a Cisco-only component for its Virtual Office Solutions (VOS) program, according to Rebecca Siman, marketing manager for Verizon's Enterprise Solutions Group. VOS was launched earlier this year to provide managed IP and telecommunications services to Fortune 1000 companies, govern-

ment and education.

In the enterprise market, Cisco will target the day extender (employees who work at home after hours) and the corporate telecommuter, and focus heavily on the insurance and financial services industries, according to Ron Willis, vice president of marketing, commercial line of business. Cisco also plans to target home-based business market, independent contractors and real estate professionals.

Cisco launched its corporate telework program eight years ago. Today, 95% of its U.S. employees are day extenders, and 85% telework one to four days per week. The results are impressive. The company claims a 25% productivity increase from day extenders, a 20% to 40% increase from teleworkers, and overall, a 300% return on investment on facilities cost savings, employee turnover and increased productivity.

In an unrelated move, Cisco last week



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announced a small-office version of its PIX Firewall appliance. The PIX 501 security appliance offers stateful inspection firewalling, a VPN client, intrusion detection as well as a four-port 10/100 switch and built-in Dynamic Host Configuration Protocol client and server.

A 10-user license costs \$600, with Triple-DES encryption \$100 more. The PIX 501 contains the same Web-based

management tools as the higher-end devices, letting network executives manage a fleet of PIX devices extending as far as home offices from one console.

Initially, the PIX 501 will not be offered as part of the corporate home-office portfolio, but Verizon's Siman says over time new products will be incorporated, including Cisco's Aironet WLAN for wireless networking and the Cisco IP Phone.

Cisco: www.cisco.com; Verizon: www.verizon.com; TManage: www.tmanage.com

Application ABCs

Giving your teleworkers the right software tools for the job.

■ BY STEVE JANSS

The week after you completed the Windows 2000 rollout, Microsoft announced it would release Windows XP in October. I know — it's just not fair.

With more than 90% of all corporate desktops running Windows, it probably seems like you're forever locked into the Microsoft upgrade, er, "path." Don't get me wrong, I use Windows 2000 Pro and Office 2000 Premium for nearly everything. Office is a great jack of all trades — editing documents, spreadsheets, presentations and small-scale databases. But if your teleworkers need more in-depth capabilities, consider these applications.

● Adobe may be the recognized leader in the graphic arts, but QuarkXPress is the page-layout software chosen by most desktop-publishing professionals. Adobe's other products are faring better than its aging PageMaker — you'll rarely find a professional photographer or graphic artist that's not using Photoshop. But Adobe has

TELEWORKING TOP 10

PART 10

An ongoing series designed to help set up your teleworkers for their small-office or home-office networks.

been busy in new areas, too. It used to be that a professional video-editing system would cost you \$30,000. But Adobe Premier, now in Version 6.0, changed that. Countless professional studios have made the switch from Avid to Premier, which is often bundled with native digital video capture and processing cards, including my favorite — the DV500 Plus from Pinnacle Systems. Avid is fighting back aggressively with its Express line of digital video editing systems.

● Your teleworkers probably won't be doing their own books. If they do, however, consider their skill level before deciding on an accounting package. Intuit's Quick-

Books and QuickBooks Pro are easy to use, but they're more like glorified personal money management programs than true double-entry accounting programs. If you need a tried-and-true professional accounting package, go with PeachTree Complete.

● If your teleworkers monitor various corporate networks, or work in a smaller office, then WildPackets' EtherPeek (see our review at www.nwfusion.com, **DocFinder: 5925**) is the best network monitoring software for the job. At \$1,000, it's expensive, but it's also powerful and easy to use.

● If your teleworkers need an outstanding multicomponent, client-server sales management package, look no further than Interact's SalesLogix. It sports an ACT-like interface, but does a whole lot more.

● Some of your teleworkers spend more time on the road than in their home offices. If they need directions before hitting the pavement, log on to MapBlast. Its new LineDrive directions are exceptional,

TELEWORKER
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Can counting keystrokes be good for telework?

While this type of data can be used myriad ways, Scalable is positioning Survey Time Manager as an enterprise telework tool that will help companies determine which employees are fit to telework, and the overall effectiveness of their telework programs.

For a company that monitors worker performance, Scalable's message is surprisingly employee friendly. It claims that because Time Manager lets individual employees "self manage" their time, it helps them increase their own productivity. The company's vice president of sales, Alex Fernandez, says that Survey Time Manager actually promotes telework by giving employees a way to quantify their productivity to reticent managers.

The idea of counting keystrokes is offensive, Orwellian, and flies in the face of

established telework best practices. Telework is an enlightened practice, not about punching an electronic time clock. Successful programs are run by managers who select only the most motivated, reliable, trustworthy employees; folks whose performance can be managed by results, not time spent typing away in Word.

Even so, Survey Time Manager is likely to open new avenues for telework, despite likely resistance from groups such as the International Telework Association & Council. While telework is not stuck in the slow lane, we're not eating its dust, either. Face it, plenty of jobs can't be measured by results — not easily, at least. And plenty of managers won't send employees home unless they can "see" them "work." Survey Time Manager could be useful in situations where employees are paid by the

hour to man a phone, for instance.

It seems that any technology that gets managers off the fence and sending folks home is a good thing. But on the other hand, telework certainly isn't for everyone.

Each worker needs to be considered individually. Survey Time Manager could be used irresponsibly by tempting companies to cut costs and corners by sending large numbers of employees home en masse.

But what do you think? Are programs like Survey Time Manager good for telework, a necessary evil or just plain evil? Share your thoughts in our forum at www.nwfusion.com, DocFinder: 5944.

Kistner is the managing editor of the Net.Worker section of Network World. She can be reached at tkistner@nww.com.

StarOffice glimmers on the open source horizon

■ BY MATT BERGER

SAN FRANCISCO — Sun is preparing the release of the next version of its open source office productivity suite, attempting to gather grass-roots support to position the software as a viable competitor to Microsoft's Office. Sun says it will have a beta-test version of StarOffice 6.0, its suite of applications for word processing, e-mail management and spreadsheets by October.

StarOffice is seen within the open source software community as a key tool to take on Microsoft in the PC desktop market. It is packaged with a number of leading Linux operating systems. Sun also distributes StarOffice as a free download from its Web site, and makes the code to the software available so users can make changes to the functions and appearance of the software. Roughly 20 million copies of StarOffice have been shipped worldwide since Sun first started offering it more than a year ago, Sun says. Five million shipments have been through downloads. Still, analysts don't expect the product to gain market share too quickly.

"StarOffice is competition for Microsoft in about three places: China, Latin America, and [in] the U.S. in places where there are severe budget issues," says Chris Le Tocq, an analyst with Guernsey Research. It doesn't compete with Microsoft in companies with healthy budgets, he added. Sun, whose primary market is the high-end server sector, says it is playing in the office software market to directly take on Microsoft and its business model of generating rev-

enue through software licenses and version upgrades. Sun doesn't depend on revenue from StarOffice, but rather hopes to gain new customer relationships and offer customers an alternative to Windows products, a Sun spokeswoman says.

Sun purchased the technology for StarOffice last year from a company called Star Division of Hamburg, Germany. In addition to the office suite, Sun also acquired a product called StarPortal, which the company has since renamed SunOne Webtop. The portal hosts a number of services that StarOffice users can take advantage of, such as online storage and remote access to documents from mobile devices, Sun says. StarPortal is similar to Microsoft's .Net. StarOffice runs on Linux as well as Windows and Sun's Solaris. Files created in the StarOffice file format, now based on XML, can be opened in Microsoft Office. Similarly, the open source software can also read and write files created in Microsoft's Word, Excel and other Office applications.

While StarOffice is compatible with the market leader, which analysts say is key to its success, the software has been criticized by some for being slow and bulky.

"StarOffice has pursued being a Microsoft Office alternative rather than creating something people want in a different way," Le Tocq says. "Because it has pursued being an Office alternative, it's ended up rolling in features that don't always end up getting used." Sun has broken the software into separate applications that can be launched independently of one another, which will

help speed up the application, the company says. In the previous version, 5.2, which Sun has called "monolithic," all the applications were launched at once.

The software can be purchased

through retail channels, such as Amazon.com for \$40. In comparison, Microsoft's Office XP Standard edition costs \$479.

In addition to the stand-alone version of the software, StarOffice

is distributed by a number of Linux vendors, including Red Hat, Ximian and MandrakeSoft's.

Berger is with IDG News Service's San Francisco bureau.

Telework Top 10

continued from page 37

and include easy-to-read graphics that handle the transition from Web to paper well. If you need to take it with you, try Rand McNally's Tripmaker. The maps are great, but it falls short delivering point-to-point directions. For that, turn to Microsoft Streets & Trips 2001.

● The decision on antivirus software is clear: Symantec's Norton AntiVirus. If you also need a personal firewall, try Norton Internet Security.

Symantec was one of the first software vendors to offer online software upgrades and patches, a task that became even easier when Symantec introduced a common interface for products. Another award-winning personal

firewall that's worth a look is ZoneAlarm.

Next story: Teleworking Top 10 Wrap-up — Where do you go from here?

Janss is the president of Jansys Information Systems, a consulting firm specializing in IS technologies for small businesses. He can be reached at bizcom@jansys.com.

Linux lessons

Pondering Linux for your teleworkers? Although the operating system supports fewer software packages than Windows, most big name software vendors these days sell Linux versions of their best-selling applications.

Corel's version of Linux (Corel® Linux® OS Second Edition) packs a four-step graphical installer and the KDE graphical user interface. Its Internet browser and file manager are combined, so you can surf everything from your hard drive to your LAN to the Internet with ease.

The best thing about Corel's Linux is that it retails for less than \$15; better, the download is free. That beats the \$150 I paid for Microsoft Windows 2000 Professional Upgrade. (Good thing I had NT 4.0, or I'd have shelled out almost twice that amount for the full version.) Although it supports less than half of the hardware supported by Windows 2000, Corel Linux includes drivers for nearly all of the more popular hardware. It also runs WordPerfect Office 2000?

The trouble is, Corel's long-term commitment to Linux is in doubt. The new version of WordPerfect Office 2002 doesn't list Linux in its systems requirements. While the company still supports the Linux versions of CorelDraw 9 and Corel Photo-Paint 9, it's released Version 10 of each for Windows only.

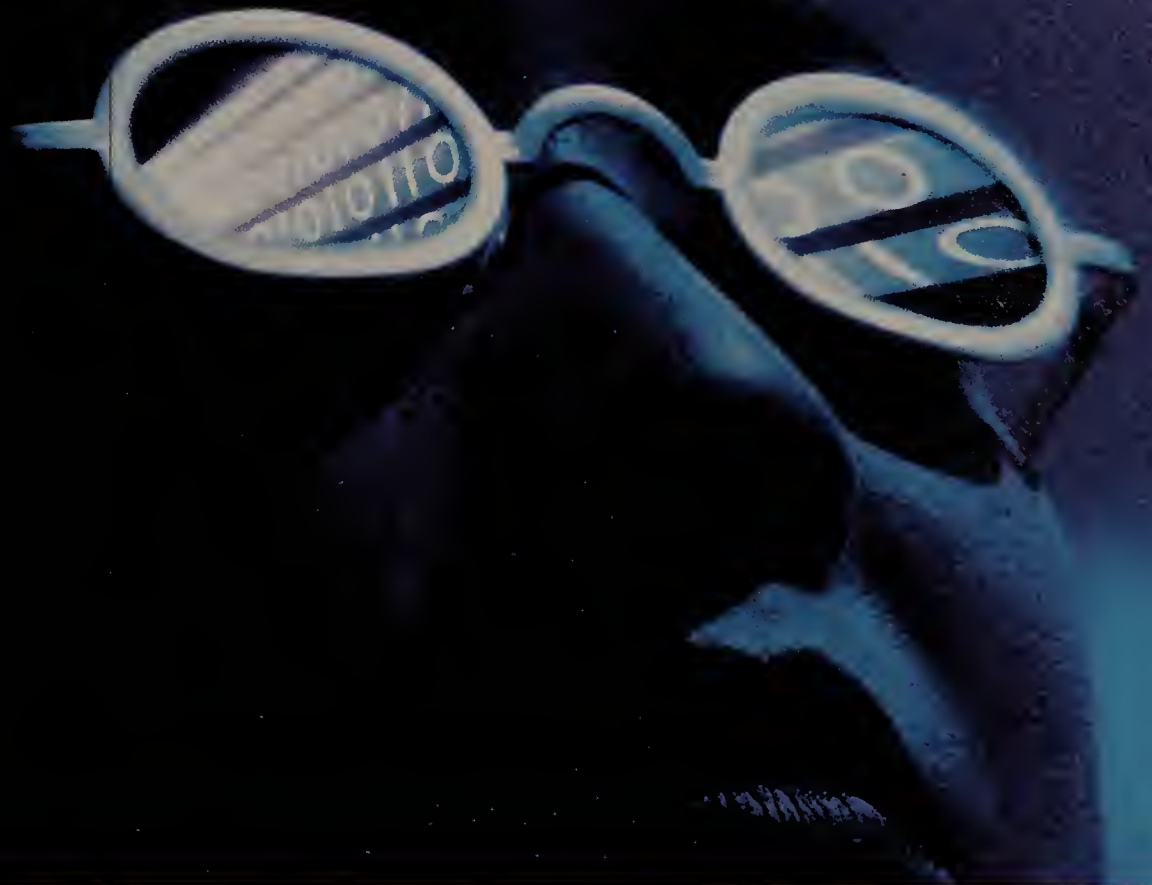
Fortunately, there's Sun's StarOffice for Linux, which runs on Linux, Windows and Sun's own operating system, Solaris. Microsoft would argue that StarOffice can't do half of what Office will do, but who needs it? StarOffice handles nearly all of the common tasks with aplomb, and even a few that Microsoft Office left out. Best of all, by avoiding the bloatware approach, it's only 105M bytes in size.

Other Linux versions include WinLinux 2001, Linux-Mandrake, and that old standby — Red Hat Linux.

Steve Janss

On the road to convergence,
how strong is your engine for change?

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Do-it-yourselfers rethink Web hosting

Managing Web sites in-house is proving too costly and difficult for some companies.

■ BY JENNIFER MEARS

Performance Products, a distributor of auto parts and accessories, has been in business for more than three decades. It's had a Web presence since 1994, running a mostly informational site from servers it manages at its Van Nuys, Calif., headquarters.

However, these days the company is looking for a managed Web hosting services provider to take the load off its IT department. It's a move that analysts — and Web hosting firms — expect to see more of as companies realize the task of running a complex e-business Web site can be more trouble than it's worth.

A recent study by Jupiter Media Metrix (see www.nwfusion.com, **DocFinder: 5932**) found that companies could save from \$6 million to \$12 million in three years by outsourcing Web hosting responsibilities, though a little less than half outsource. The report says companies that keep Web servers in-house are overestimating

the competitive advantage of in-house Web hosting.

While Web hosting companies are struggling in the current economy, market research firm IDC predicts Web hosting revenues will more than triple from \$4.8 billion this year to more than \$16 billion in 2005. The growth will be driven in large part by demand for managed services, analysts say.

The challenge for network executives is to determine whether outsourcing your Web hosting fits with your company's broader business and network strategies. Some executives are reluctant to outsource because of concerns about security; the financial viability of outsourcing vendors; and the competitive advantage that may be associated with keeping servers in-house. But there are other issues, such as performance and priorities, that have companies such as Performance Products heading toward outsourcing.

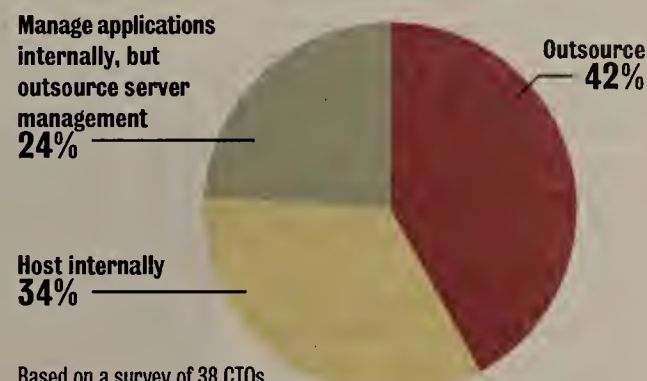
In March, Performance Products relaunched its Web

See Web hosting, page 42

Hosting by the numbers

Jupiter predicts that in-house hosting will be rare in three years as companies realize they can get better service and save 30% to 40% of IT costs by turning servers over to specialists.

How do you host your Web site?



Based on a survey of 38 CTOs.

Hancock, Exodus part ways

■ BY JENNIFER MEARS

SANTA CLARA — Exodus Communications CEO Ellen Hancock has resigned from the Web hosting firm in a move analysts say is likely aimed at appeasing Wall Street, but does little to help the company.

Exodus announced Hancock's resignation last Tuesday and said William Krause, a member of the Exodus board since June 2000, will take over as chairman and CEO. Krause retired as chairman of 3Com in 1993 and is president of LWK Ventures, an investment company in Silicon Valley.

Krause also served as CEO of Storm Technology, a digital imaging company. He previously held various general management and executive positions at Hewlett-Packard.

In an interview with *Network World* last month, Hancock said she had no plans to leave the company as it sought to establish itself as a managed Web hosting services provider for corporations.

"I really do believe that this management team can manage this company. We will get through these tough times," she said.

It wasn't clear whether Hancock was asked to step down, although a statement from Krause indicated the decision was mutual.

"We agreed with Ellen that it's time to transition the leadership of the company

as it maneuvers through challenging times," Krause said.

Challenging times, indeed. Two weeks ago Exodus announced three members of its board of directors resigned, trimming the board to seven. That news followed the resignations in May of CFO Marshall Case, COO Don Casey and Chief Marketing Officer Beverly Brown. What's more, Exodus has watched its dot-com customer base erode, lowered its revenue guidance, imposed layoffs and reduced capital expenditures for the year from \$1.2 billion to \$900 million.

It's been a tough year for the once high-flying firm.

"This is a move to appease investors and signal that change is afoot," says Joel Yaffe, a senior industry analyst at Giga Information Group. "What it doesn't do is fix the situation. As much as Ellen got a lot of credit for things that weren't beneath her direct control when things were going well, she's now taking a lot of the blame for things that also aren't within her control."

Melanie Posey, a program manager at market research firm IDC, agrees that Exodus is responding to Wall Street.



Three years after taking the helm of Exodus and leading it through high times, Ellen Hancock parts ways with the now struggling company.

"There was so much Ellen-bashing going on, on Wall Street, and they probably figured Wall Street would stop beating up on Exodus if they got rid of Ellen," she says. "I don't understand it. Ellen Hancock didn't single-handedly make the economy tank."

Yaffe says the hope for Exodus now is that it can find a buyer, even with the \$3 billion in debt it carries.

"Right now that would be a successful outcome,"

Yaffe says.

As for corporations, Exodus customers and potential customers should "think twice," Yaffe says. "Right now it's the worst possible situation. The company is limping, and nobody knows when it's going to fall down. The uncertainty is worse than them being bought and then at least you know [what's going to happen]."

Yaffe says Exodus customers he has spoken with are "clearly concerned." He recommends that customers have a contingency plan. "Whether that means mirroring with another provider, whether that means taking their business elsewhere, at least until it's clear what the outcome is going to be." ■

Short Takes

■ A new online glossary of more than 8,000 telecommunications terms is available free of charge via the **Alliance for Telecommunications Industry Standards** at www.atis.org/tg2k. The list includes acronyms, graphics and a search engine. The glossary has been approved as American National Standard T1.523 by the **American National Standards Institute**.

■ The **Federal Communications Commission** has given **NextWave** back the controversial wireless licenses it plans to use to build a third-generation wireless network, on which it would offer wholesale wireless data services. The U.S. Circuit Court of Appeals in the District of Columbia ruled the FCC violated part of the U.S. Bankruptcy Code by initially repossessing NextWave's licenses (see www.nwfusion.com, **DocFinder: 5936**). But other providers believe they are the rightful owners of these licenses because the FCC sold them again in an auction earlier this year. The FCC is asking the U.S. Supreme Court to review the appeals court decision.

EYE ON THE CARRIERS

Johna Till Johnson



A venture capitalist recently asked if I shared his belief that large companies were looking to outsource their storage centers to third parties. With characteristic tact and diplomacy I replied something like, "On what planet? Not in my universe, they aren't." Turns out his company had just made an investment in a company whose business model was — you guessed it, storage service provisioning.

Ooops.

But that got me thinking: Why aren't storage service providers (SSP) the great success story of 2001?

According to analysts, the press, and the venture capitalists, they're supposed to be.

Storage service providers: Success story that wasn't

A report from The Yankee Group claims that the market for outsourced storage services is projected to reach \$2.2 billion by 2002. Yet I'd wager that it's currently less than half of that.

But why? On paper at least, companies such as StorageNetworks, Arsenal Digital Solutions, StorageWay, StorageProvider and a host of others have what appears to be a winning business proposition to the typical CIO or CTO:

First, you'll save money in storage management (the SSPs are promising 20% to 30% savings annually). While the market is too new to take such numbers without a grain of salt, the logic holds up: A large part of infrastructure cost lies in management, which can be handled economically by outsourcing.

Second is new technology risk mitigation — a big deal in an industry whose state of flux is reminiscent of the network industry circa 1991.

With Fibre Channel duking it out with

IP, and InfiniBand and Direct Access File System threatening to up-end the entire technology game board, picking the wrong technology could have costly consequences.

Outsourcing puts the risk squarely in someone else's lap — which ought to be an appealing idea.

So why aren't SSPs inundated with demand? I interviewed large companies to find out, and uncovered two main concerns. First, more than half of the companies didn't even have an overall storage strategy to begin with — and it's hard to outsource something when you haven't gotten around to acknowledging it exists. The notion that storage now comprises upwards of 60% of overall system costs — up to 90% for some applications, such as data warehousing — came as a major news flash to many.

Secondly, most large companies have a — how can I put this tactfully — less than benign view of service providers.

The consensus is that companies that measure local loop provisioning times in geological terms (the word "eon" comes to mind) can hardly be trusted to provide reliable service levels for storage services. Storage is both technically complex and business-critical, and quite frankly, large companies don't yet trust the SSPs to do a decent job.

For SSPs to become viable enterprise alternatives, first, companies need to craft storage strategies (which may or may not include outsourcing). Second, SSPs need to compile (and promote) a track record of effectively meeting their service-level agreements. Tall orders? Maybe. But necessary, if SSPs are to be the success story for, say, 2003.

Johnson is senior vice president and CTO for Greenwich Technology Partners, a network consulting and engineering firm. She can be reached at johna@greenwichtech.com.

Web hosting

continued from page 41

site to give customers greater access to products online. Neil Levitt, director of Internet operations, figured the transition would be smooth and that his team could continue to handle it internally. But it didn't turn out that way.

While the company designed the network and server infrastructure to handle a doubling in Web site traffic, "we surpassed that in the first 90 days," he says. Traffic has tripled at the redesigned site, which is more complex than the previous site. The new site features personalized catalogues, for example, that are created dynamically, with customers inputting auto make and model.

"We were just naïve in what we were doing," Levitt says. "It just ended up hitting us really hard."

Levitt and his staff tried to correct problems but found all aspects of the hardware were simply overloaded. He ended up bringing in a Microsoft technical engineer to analyze the systems.

"Then we had to go out and make a fairly significant investment in additional hardware," he says. "Now we're at the point where we can start looking at performance aspects of different parts of the hardware and software."

Levitt is also talking with several hosters, including Digex, which provided an in-depth return-on-investment analysis to help Levitt quantify the pros and cons of going with a hosting provider.

Plan ahead

According to Jupiter Media Metrix, more than

80%

of companies begin Web projects without first designing site management and infrastructure.

Nine out of 10 of these companies will find their infrastructures aren't up to the task and will have to spend money rebuilding as a result.

After meeting with Levitt and getting information about his current infrastructure and needs, Digex gave him a report that included a financial analysis showing what things would cost in-house vs. with a managed hosting facility.

Levitt wouldn't be specific about what the savings were, but he says Digex claims companies can save between 30% and 70% of their hosting costs by outsourcing.

"Right now I have a guy dedicated to making sure our site is up and running and it's stable and it's performing well. That's not what I originally hired that person for," Levitt says. "He's trapped in that until I can either hire somebody else or find a company to take this burden off

of us."

Daniel Guermur, CEO of Metadot, a portal software vendor and subsidiary of oil and gas technology firm Schlumberger, says he was hosting some servers in-house, but decided to turn over all of his hosting responsibilities to Rackspace, a San Antonio, Texas, hosting firm. Rackspace now handles "the back end, the difficult work of managing the network and the server" so that Metadot can "focus on our core competency," he says.

By moving his servers into Rackspace facilities, Guermur saved between \$150,000 and \$200,000 initially and expects to save between \$50,000 and \$80,000 in hosting costs each year.

Although, other companies aren't as quick to jump on the Web hosting bandwagon. For example, McAfee.com hosts more than 250 servers in-house and has no plans to move any of them into a hosted data center.

McAfee CIO Doug Cavit doesn't discount the savings some companies can achieve by outsourcing Web hosting responsibilities, but says he gets a strategic advantage by keeping things in-house.

"I can go to market very quickly with advanced technologies that would be difficult to implement using managed services," he says.

"If I'm a company where this is not necessarily my core competency, if I'm running something very generic, then, yeah, it probably does ... make a lot of sense for someone else to worry about it," he adds. ■

BellSouth gets more frame relay-friendly

Complete Frame aims to cut cost, install time.

■ BY MICHAEL MARTIN

ATLANTA — BellSouth has begun providing customers with a single point of contact for frame relay installation, hardware and managed services — an offering that could save customers time and money.

Before the new Complete Frame offering was introduced, BellSouth customers had to go to different places within the carrier to coordinate the hardware and circuit installation and ongoing management for their frame relay networks.

Complete Frame also gives customers the option of ordering an enhanced router management service. This service involves monitoring enterprise frame relay drops in the U.S. or internationally that are part of a BellSouth customer's network, but aren't provided directly by Bell South, says Diane Turcan, segment marketing manager for large business services.

Turcan estimates that the streamlined ordering process should cut customer installation times in half.

Installation times would vary depending on the number of frame relay drops a customer required and what management services they ordered.

Complete Frame should also save customers money vs. ordering each component of a frame relay network separately, Turcan says. Pricing begins at \$289 per month per site for an unmanaged 64K-bit/sec service.

Most carriers already offer managed frame relay services like Complete Frame, either publicly or at the request of large enterprise customers, says Sandra Palumbo, an analyst with The Yankee Group.

"They're trying to maintain frame relay's place in the market," she says. "A lot of enterprises are looking at things like IPVPNs, and the carriers aren't interested in having everyone move over to the new technology all at once."

Speeds available under Complete Frame range from 64K to 45M bit/sec. The offering is available on two- and three-year contract terms.

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The Edge

■ SERVICE PROVIDER DEVELOPMENTS
AT THE JUNCTURE BETWEEN THE ENTERPRISE
AND THE NEW PUBLIC NETWORK

Vendors pitch all-in-one security boxes

New devices combine firewall, VPN and intrusion detection technologies.

■ BY TIM GREENE

Companies looking to simplify their network security setups will soon have a handful of new products to choose from that act as firewalls but include other functions such as VPN and intrusion detection.

New gear from Nexsi, iPolicy and ServGate is roughly similar in that it is designed to protect high-bandwidth data centers and contain enough processing power to handle multiple security functions without creating a network bottleneck. But the

companies are trying to differentiate themselves through the chips and applications they use in their products.

The companies are among a growing number of vendors, including Asita Technologies and Crossbeam Systems, that are building such devices, according to Jeff Phillips, an analyst with TeleChoice.

"To put in a single device rather than putting in separate pieces for VPN, firewall and intrusion detection is very attractive in a data center," he says.

These security devices also compete against fast firewall/VPN gear made by NetScreen, Cisco, RapidStream and others, Phillips says. He expects vendors of

these dual-function devices to add more features over time.

New from Nexsi

Nexsi is introducing the Nexsi 8000, a modular chassis that sits within a service provider network and takes in aggregated traffic from customers.

The box imposes security policies on this traffic and passes it on to data-center servers located on individual virtual LANs (VLAN) to keep customer traffic separate. Nexsi calls these VLANs secure service domains, and each chassis supports 100 of them.

Nexsi is writing all its own security appli-

cations so that they function optimally with custom-built processors. The company claims this is an advantage over using general network processors and licensing software from other vendors.

The Nexsi 8000 chassis has a nonblocking backplane so it can simultaneously support an IP Security VPN and a firewall, each at 8G bit/sec.

The six-slot chassis supports 12 Gigabit Ethernet ports, eight for traffic and four for management or to connect with a redundant Nexsi 8000.

Nexsi 8000 will be available in the fourth quarter with VPN, firewall and bandwidth

See iPolicy, page 46

Short Takes

■ **Taqua Systems** and Integral Access are announcing interoperability between Taqua's Open Compact Exchange softswitch and Integral Access' Pure Packet Node, its aggregation hardware. Together the two can support voice and data services without using traditional Class 5 local voice switches, which are more expensive. Taqua's gear controls the services delivered while Assured Access's equipment manipulates the packets over its Multi-protocol Label Switching fabric. www.integralaccess.com; www.taqua.com

■ Developers need to speed up work on standards for metropolitan Ethernet, according to the **Metro Ethernet Forum (MEF)**, which met recently. The group set up working groups to tackle these issues: reference model for metropolitan Ethernet networks; technical descriptions of metropolitan Ethernet services; defining procedures for supporting these services; and defining ways to manage metro Ethernet networks and services. The group has grown about a third to 50 member companies since its June meeting. www.metroethernetforum.org

Foundry to make Ethernet MANs more manageable and resilient

■ BY PHIL HOCHMUTH

ATLANTA — Foundry Networks will announce at NetWorld+Interop 2001 in Atlanta this week a software upgrade that will make its metropolitan-area network core and edge switches easier to manage and bounce back faster from link failures.

One key change is the addition of Rapid Spanning Tree Protocol (RSTP) in Version 7.5 of Foundry's IronWare software for the BigIron MAN backbone and FastIron customer premises equipment switches.

In Ethernet service provider networks based on Layer 2 technology, spanning tree can be used to prevent loops in a network and provide for the rerouting of traffic in the event of a link failure.

Foundry says RSTP, also known as 802.1w, on its switches will let Layer 2 Ethernet MAN services recover from downed backbone links in 2 to 3 seconds, instead of up to 40 seconds as with regular Spanning Tree Protocol.

New features of IronWare 7.5 software include a proprietary method for combining groups of metropolitan service subscribers into what it calls spanning tree domains that

are based on virtual LAN (VLAN) tags, which identify each customer.

Called Superspan, this method combines multiple VLANs into groups of RSTP instances — or unique, nonlooping routes — within a MAN.

Foundry, as well as other makers of Ethernet MAN switches, is a proponent of using VLAN tags to divide customers in a service provider network.

Previously, Layer 2 VLAN technology required a separate instance of Spanning Tree Protocol for each VLAN. Superspan lets service providers group VLAN tag numbers into spanning tree domains. Each switch can support between two and 16 such domains, the company says.

The net effect of these domains is to reduce the number of spanning tree maps providers have to manage and increase the number of VLANs that a single switch can handle.

Even though the 802.1Q standard supports a maximum of 4,096 VLANs in a network, most Ethernet switches can only support 64 to 128 spanning tree instances. The



company says its switches running Superspan can support the maximum number of VLANs — 4,096 — with up to 256 VLANs in 16

spanning tree domains.

Despite Foundry's position that Ethernet-based MANs based on RSTP and VLANs can provide reliable and secure networks, metropolitan Ethernet vendors and enterprise users have questioned how secure VLANs are in a public network and whether RSTP could support the same level of resiliency as SONET-based networks (www.nwfusion.com, **DocFinder: 5942**).

According to market research firm IDC, equipment such as Foundry's, which is based on Layer 2 to 7 Ethernet LAN switch technology, will grow rapidly in service provider networks during the next few years as providers begin rolling out Ethernet WAN services and increase data center and hosting offerings. The research firm expects LAN switch port shipments to service providers to increase from 6 million to almost 40 million between 2000 and 2005.

IronWare 7.5 is available for free to Foundry customers with valid support contracts.

Foundry: www.foundrynet.com



More online!

Questions to ask your MAN service provider.

DocFinder: 5941

Sonus prevails despite carrier spending cuts

Softswitches and media gateways are selling despite tight money.

■ BY GEORGE CHIDI

WESTFORD, MASS. — Nestled in the woody hills of this rural town, 4-year-old Sonus Networks is emerging as a survivor in the battle for carriers' capital expenditures.

The strategy: Package two key pieces of equipment that carriers need to transition their voice networks from traditional circuit switching to packet switching.

"Carriers don't put pieces together," says Hassan Ahmed, Sonus' president and CEO. "They're lousy integrators. It's too difficult to build a piecemeal solution." To make carriers' lives easier, Sonus integrates two elements of next-generation network architecture, softswitches and media gateways.

Traditional circuit switched network gear irreversibly combines the hardware that switches phone calls and the software that gives the intelligence to properly route calls and adds call features

“Carriers don't put pieces together. They're lousy integrators. It's too difficult to build a piecemeal solution.”

Hassan Ahmed

President and CEO, Sonus

such as call waiting or three-way conferencing.

The new architecture separates the software from the hardware. Softswitch software runs on off-the-shelf servers. Media gateways are hardware, changing a circuit signal to IP, frame relay ATM or vice versa, letting circuit-switched phone calls run on an IP network.

Sonus bets carriers will need a package of gateways and softswitches for the edge of their networks, rather than separate items from separate vendors. Sonus acquired softswitch maker Telecom Technologies last November because its softswitch worked better

than Sonus' — in phone companies' central offices where backbones connect to local phone lines, Ahmed says.

Carriers began using packet technology on network backbones, which is where Sonus positioned its earlier technology. The edge of the network is next, Ahmed says. "We've been making the right bets," Ahmed notes. "We bet the core of the network would packetize first, and we won."



Convergence

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Sonus' gateway-and-softswitch strategy differs from others in the field. Some companies, such as established players Lucent and Nortel, try to make every kind of network component. Independent media gateway and soft-switch companies have struggled, while Sonus has performed better, analysts say.

"They're a leading carrier gateway switch vendor, if not the leading," says Tom Valovic, director of IP telephony at market research firm IDC. "There are other companies that do nothing but softswitches. [Sonus'] softswitches are secondary. Their success is based on the media gateway."

BellSouth uses a Sonus soft-switch/media gateway package to lighten the load on the traditional circuit switches that feed Internet service providers.

These switches are meant to deal with calls that last about 3 minutes, but calls to ISPs more typically last for hours. "The public switched tele-

phone network is not designed to handle this kind of traffic," says Steve Turner, director of network transformation for BellSouth.

"We felt that [Sonus'] solution would be able to off-load some of our traffic," he adds.

Sonus equipment met BellSouth's standards for reliability and compatibility better than competitors', Turner says. "Sonus had a more mature solution. It met all of our needs for the application," he says.

Carriers look to packet-based technology such as Sonus' softswitches and media gateways because it is more flexible and less expensive to deploy than traditional circuit-switched gear. Expanding the capacity of a traditional local circuit switch costs about 10 times what it costs for a softswitch/media gateway equivalent.

Developers can write new software for a softswitch with relative ease compared with new software for proprietary circuit switches. These new applications can be tested in one or two markets to see how well they work and whether customers want to buy them, without buying a production run of million-dollar circuit switches.

It is also possible to let customers directly add or cancel services from their carriers, rather than calling in changes and waiting for providers to process them.

"Today, when you want to make a change in your service, you have to call someone and if you want something a little bit different you get transferred around a lot," says Mike Hluchyj, Sonus' CTO and founder.

"That's expensive for carriers. It would be nice if I could do it with [an Internet] browser," he says.

Despite optimism from analysts and the company itself, Sonus' stock has had a bumpy ride. Sonus traded near historic lows at around \$14.50 per share at the end of August, in part from a late-month hammering on news that WorldCom would cut its capital expenditures on new network equipment. The stock traded as high as \$72 in August 2000, three months after its IPO, just as the market's bubble popped.

Chidi is with the IDG News Service.

IPolicy

continued from page 45

management applications. In the first quarter of next year, the company will add Web switching and Secure Sockets Layer acceleration functions.

IPolicy's IPEnforcer

IPolicy Networks is introducing IPEnforcer 5000, which combines the functions of a firewall and intrusion detection server. The company plans to add other security applications, such as VPN and URL filtering. IPEnforcer 5000 can perform these functions simultaneously at up to 2G bit/sec.

The box can keep separate sets of policies for up to 100 separate corporate accounts and 500,000 simultaneous sessions.

IPolicy says it will ship the IPEnforcer 5000 security appliance in October and that it will sport quality-of-service technology that protects the device from being swamped by denial-of-service attacks.

Customers will be able to configure the appliance to turn down bandwidth available to certain traffic or limit the number of TCP connections from a given source.

The company says the device's software architecture parses packets as they come into the box, and the data gathered about them is shared among all the security applications. This relieves processors from having to scan packets individually for each security application.

IPolicy partners with other companies, including Symantec for intrusion detection and Elron for firewall technology, for some of the security applications that run on the 5000.

Management software for iP-



Nexsi 8000 features custom processors and applications.

Enforcer 5000 lets customers set up and enforce security profiles. The software also allows multiple views of and access to the network. So a security services wholesaler could have a view of all the IPEnforcers in the network, an ISP that is the customer of the wholesaler might have a view of just the IPEnforcers it uses, and the ISP's customers might get their own view of their policies. Each group could have rights to change profiles.

The box supports up to four applications at once, but an additional processor card will be available in the fourth quarter that will boost that to seven applications.

The IPEnforcer 5000 is a fixed-configuration box with four Gigabit Ethernet ports. The company plans a smaller device, IPEnforcer 3000, for enterprise data centers, and a larger chassis-based model called IPEnforcer 9000.

IPEnforcer 5000 costs \$99,000 plus \$25,000 for the management software.

ServGate to make N+1 splash

ServGate is introducing at NetWorld+Interop 2001 in Atlanta this week the SG2000H, a carrier-grade version of its enterprise data center device.



ServGate2000 supports 500 virtual firewalls.

The new model supports 500 virtual firewalls; that is, it supports 500 separate sets of policies for individual customers.

The older edition acts as a single firewall.

The new device supports 1G bit/sec firewall throughput. By year-end, the device will also support virus scanning and VPNs.

The company claims its firewalls handle packet processing better than other devices because of a proprietary algorithm it uses to compare packets to firewall policies. As a firewall gets a packet, it checks whether a TCP session for that packet stream already exists. If not, it has to decide whether to block the packet or let it through by checking it against set firewall rules.

SG2000H is available in the fourth quarter for \$75,000.

Nexsi: www.nexsi.com; iPolicy: www.ipolicy.net.com; ServGate: www.servgate.com

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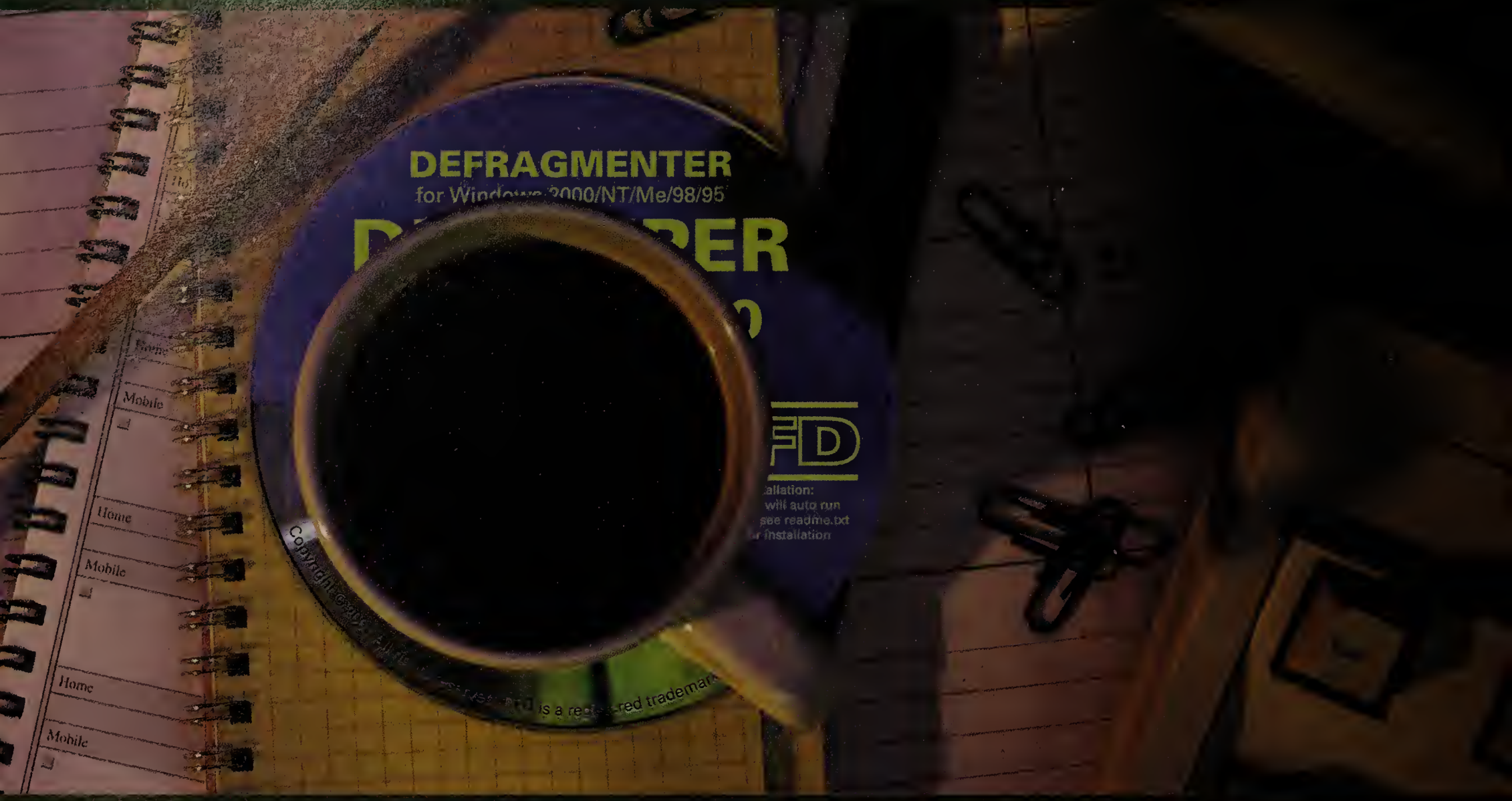
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Technology update

■ AN INSIDE LOOK AT THE TECHNOLOGIES AND STANDARDS SHAPING YOUR NETWORK

Smart storage switches are coming

■ BY BOB HANDLIN

Intelligent storage switches, which are being developed by several start-up vendors, could solve the problem of how to manage distributed storage devices.

The key technologies driving storage to date have been storage-area networks, which consolidate storage at the block level; network-attached storage, which provides consolidation and optimization at the file level; and virtualization, which abstracts either block or file resources to make them look like a single, ubiquitous pool.

SANs, NAS and virtualization each help you manage storage more easily. However, when used in isolation they simply make bigger islands of storage, which still need to be managed separately. The logical evolution could be provisioned as well as managed from a single, centralized pool of disks. This could be accomplished with intelligent storage switches.

An intelligent storage switch is built around a protocol-agnostic crossbar switching fabric. The switch fabric ties together other intelligent modular components that support various interfaces and protocols. In doing so, it moves intelligence and management out of the storage arrays and servers, and into the center of the storage network. The theory is that once the intelligence is in the middle, resources such as server and disk array access can be centrally managed.

An intelligent storage switch provides Ethernet interfaces for access to LANs, MANs and WANs, and file-level access (NAS) or block storage over IP (iSCSI, for

example). The switches' Fibre Channel ports provide block-level access to disk arrays or hosts (or both using Fibre Channel switches). The switch manages protocols and protocol conversions, and houses processing power for functions such as virtualization. Management is housed in the center of the converged IP and storage network.

An intelligent storage switch offers the

following advantages:

- **Modular design:** A modular chassis lets you mix and match protocols and speeds, and upgrade to newer and faster ones as they emerge.

- **Multiprotocol support:** Database applications tend to be best served by high-performance, block-level SAN access. NAS is best for file serving functions. Disaster recovery applications may require a proto-

col such as iSCSI. Serverless backup requires an approach such as Network Data Management Protocol. An intelligent storage switch collapses these services into one device.

- **In-line virtualization:** An intelligent storage switch can centralize disk pooling in a single high-performance device, then present block and/or file entities as appropriate.

- **Integrated load balancing:** The load balancing function can be as close to the data as possible to decrease the complexity of IP-based load-balancing schemes.

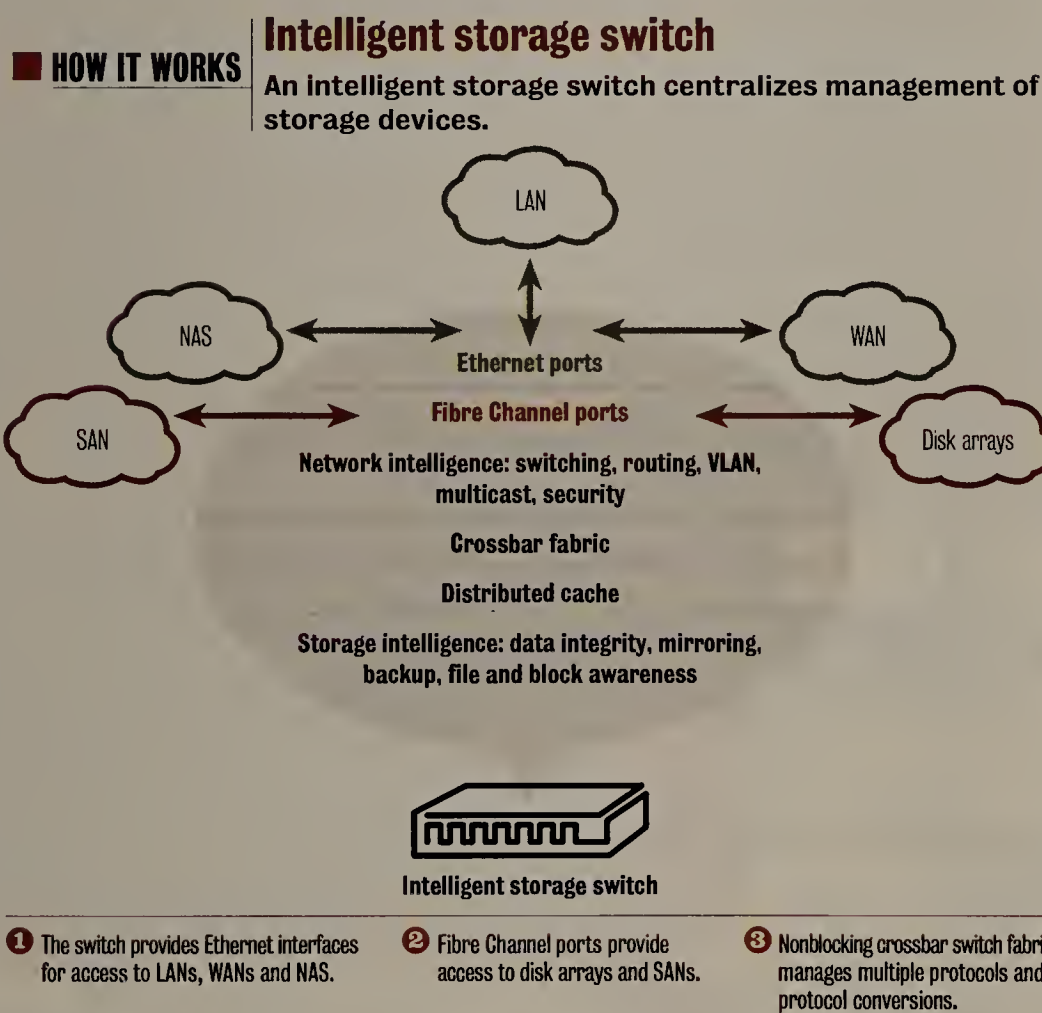
- **High-speed data mover at the core:** A crossbar switch at the core of the data-moving infrastructure optimizes data moving capacity.

- **Carrier-class design for highest availability:** Unlike server-based appliances, intelligent storage switches are designed for highest availability.

- **Separate disk arrays.** Today's storage architectures lock you in to purchasing disks at whatever prices vendors decide to charge. With an intelligent storage switch, you can purchase higher-end RAID arrays for some applications, and cheap JBOD (just a bunch of disks) for others.

Intelligent storage switches are expected to be available from a number of start-up vendors this fall. Additionally, many incumbent switch vendors have announced the intention to fold some of these capabilities into their platforms.

Handlin is a senior product manager with storage networking company Pirus Networks. He can be reached at bhandlin@pirus.com.



Ask Dr. Internet

By Steve Blass

In your recent column about the man in Pakistan building a WAN (www.nwfusion.com, DocFinder: 5931), you perpetuated a common pitfall of system architects. Price is important, but don't imply that decisions should be made on price. I think reach, reliability and then price is the appropriate order.

You're right. The most important feature of a network is that it reliably carries traffic between network nodes. I was trying to avoid being U.S.-centric in my recommendation for a network in a different part of the world. For the record, www.ptcl.com.pk is the home of the Pakistan Telecommunica-

tion Co., Ltd., which states it is the sole provider of the backbone transmission network in Pakistan with exclusivity on domestic and international fixed line services through 2002. The tariffs there for a 1M bit/sec domestic leased line for corporate customers range from about \$55 to \$110 per kilometer per year, while a 1M bit/sec international leased line half-circuit ranges between about \$4,000 and \$9,000 per month, depending on the classification of the buyer.

Blass, a network architect at Change@Work in Houston, can be reached at dr.internet@changeatwork.com.

GEARHEAD
INSIDE THE
NETWORK
MACHINEMark
Gibbs

What was that, four weeks of FTP? Let's make it five! This week, we'll look at a stripped-down version of FTP: Trivial File Transfer Protocol (TFTP), which is usually used to transfer configuration data to and from routers, firewalls and so on. TFTP is a simplified version of FTP, but the architecture is different enough that regular FTP clients won't be able to talk to a TFTP server — they'll need a TFTP client.

The main difference between TFTP and FTP is that the former uses the User Datagram Protocol (UDP) to communicate with the TFTP server rather than FTP's Transmission Control Protocol (TCP). This is the primary reason for needing a special client.

Now class, what else does using UDP mean? Yes, you at the back, Jenkins ... that's correct! UDP is unreliable! So using UDP means there's no guarantee that a file will be transferred without explicitly acknowledging each packet transferred. Exactly!

Yet more (Trivial) FTPing

TFTP is really very simplified — all the client can do is read or write a file. There's no directory browsing, no file renaming, no logging in (honest), no statistics, nothing but the basic getting and putting of files. The standard packet size for TFTP transfers is 512 bytes of data, and on receipt of a smaller packet, the client or server assumes end-of-file has been reached.

In the case of an error condition, the device that detects the error sends an error packet. There are three error conditions recognized by TFTP that cause the current transfer to be aborted: request cannot be handled, such as file not found or access violation (implementation may add any number of conditions); receiving a malformed packet; and loss of required resource such as a full disk or access violation during transfer (again, implementation has a lot of say in this instance).

For all the grizzly details, refer to RFC 1350 (see <ftp://ftp.isi.edu/in-notes/rfc1350.txt>), "The TFTP Protocol (Revision 2)," dated July 1992. Other relevant requests for comment are RFC 2349 ("TFTP Timeout Interval and Transfer Size Options"); RFC 2348 ("TFTP Blocksize Option"); RFC 2347 ("TFTP Option Extension"); RFC 2090 ("TFTP Multicast Option"); RFC 1986 ("Experiments with a Simple File Transfer Protocol for Radio

For all the grizzly details

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Other relevant RFCs are:

RFC 2349 "TFTP Timeout Interval and Transfer Size Options"

RFC 2348 "TFTP Blocksize Option"

RFC 2347 "TFTP Option Extension"

RFC 2090 "TFTP Multicast Option"

Links Using Enhanced Trivial File Transfer Protocol (ETFTP)"); RFC 1785 ("TFTP Option Negotiation Analysis"); and RFC 0906 ("Bootstrap Loading Using TFTP").

If you want to try a TFTP implementation, go to http://members.nbci.com/stellar_x/, a Web site owned by Antonino Iannella, a software engineer in Australia sporting the company name Stellar Pty Ltd. Iannella created the free Stellar TFTP suite that consists of a client and server designed for Windows 95 and NT. We ran both successfully on Windows 98 and NT 4.0 SP6.

The server lets you permit or deny uploads and downloads; restrict uploads and downloads to specific, separate folders; prevent file overwriting; select the

timeout value; and restrict the IP address ranges clients come from. There's also activity logging and the option to launch a program after every upload.

On the other end, the Stellar TFTP client allows you to name the TFTP server (or give its IP address), gives you upload and download options and a mode choice (ASCII or binary), supports logging, and lets you select a timeout value.

This product seems to work just fine but if you want a more sophisticated server implementation check out Philippe Jounin's Tftpd32 server (there's no client) at http://membres.tripod.fr/phjounin/P_tftpd32.htm.

This server supports transfer block sizes up to 8,192 bytes and as small as 8 bytes (the client must be capable of handling what are called "option negotiations" as defined in RFC 1782) and can be configured to not bother sending acknowledgment packets to improve performance.

Another free server worth investigating is TFTP Server from SolarWinds.Net (www.solarwinds.net/Tools/Free_tools/TFTP_Server/), which can perform multiple simultaneous send and/or receive transfers.

If you know of any TFTP implementations that you consider interesting, send them to gearhead@gibbs.com.

Cool Tools

Gizmos, gadgets and
other neat stuff
Compiled by
Keith Shaw

Welcome to the weekly launch of Cool Tools! Every week, we'll give you a roundup of some new gizmos, software or Web sites. Every now and then, we'll give you a "hands-on" review of such coolness.

Who's your Buddy?

InnoMedia's BuddyTalk lets you talk over the Internet in four ways (PC-to-PC, PC-to-phone, multiparty conferencing of up to 10 users, and instant messaging). The voice-over-IP client is free at www.buddytalk.com. PC-to-PC calls to other BuddyTalk users are free, PC-to-phone calls are available for 5 cents per minute in the U.S. The multiparty conferencing service is available for \$3 per call for up to one hour; the fee is paid by the call originator.

Ship out your videos . . .

If your business has a lot of videotapes sitting around in a storage closet, you might want to consider transferring them to DVD. A service called YesVideo has launched a new service that will convert videotapes into DVD. There are two ways



Action! Make your own DVD videos with Apple's new Power Mac G4.

to use the service: You can drop off videos at a photo store that uses Kodak Processing Labs, or go to the Web site (www.yesvideo.com) for instructions on sending videotapes directly to YesVideo. About two weeks later, users receive back their DVDs, along with the original videotape. The service will also convert videos onto interactive CD-ROMs. Pricing of the DVD service will start at \$69.95 for up to one hour's worth of video.

. . . or just do it yourself

Of course, you could just take all of your old movies and videotapes and create your own DVD with a new Power Mac and its iDVD authoring software, iDVD. The new Power Mac G4 includes its SuperDrive, a combination CD-RW/DVD-r that can burn DVDs. With the pre-installed iDVD or optional DVD Studio Pro software, you can create DVDs. The



Power Mac G4s start at \$1,699, and can be ordered through Apple's Web site (www.apple.com).

Give your apps a voice

IBM's new WebSphere Voice Toolkit lets developers create speech-enabled applications accessible by telephone or other mobile devices. The tool kit supports VoiceXML and lets developers provide voice access to information on Web sites, databases and corporate intranets. The software contains program editors, grammar editors, pronunciation builders and VoiceXML Reusable Dialog Components, which speed development of voice applications and let developers build the applications without being familiar with voice programming. The tool kit will be available in the fall, free for download through www.ibm.com/alphaworks, or at www.ibm.com/software/speech.

One secure Puppy

Sony's Puppy unit is a fingerprint identification device (FIU-710, \$300). The unit matches and stores users' fingerprints

inside the device, not on the PC or on the Internet. The credit card-sized device then uses the fingerprints to log on to a PC, replace passwords and secure folders on Windows 98, Millennium Edition and 2000 systems. The unit is bundled with I/O Software's SecureSuite program. The device can support multiple applications, and future functionality includes digital certificates and electronic signatures. For more information, go to www.sonystyle.com and search for "fingerprint."

Organize and share your USB devices

Belkin's new four-port Universal Serial Bus switch (\$40) lets users share any USB device with up to four USB-enabled desktop or notebooks. The device provides four USB ports, plus a peripheral connection port that can connect with almost any peripheral. The front of the hub has a push-button port selector and illuminated LEDs that show the user the port-selection status. The selected computer becomes the "active" computer, and can access the desired peripheral. By connecting a four-port USB hub to the switch, you can connect more devices to your "network." Go to www.belkin.com for more information.



Belkin's USB switch lets you share your USB stuff.

Got a cool new product? Let me know at kshaw@nw.com.

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EDITORIAL

John Dix

Adding up HP's acquisition of Compaq

On paper, Hewlett-Packard's proposed acquisition of Compaq makes sense. Combining the companies would create a powerhouse with a nicely rationalized portfolio of products, from high-end, fault-tolerant systems and data center Unix boxes, down through PC-based servers and desktops. On Day One the company would be the top supplier of PCs and servers.

But the deal is eerily reminiscent of Compaq's 1998 \$9.6 billion acquisition of Digital. That marriage was intended to help Compaq break into the increasingly important services business and create a soup to nuts system house — combining Digital's vast VAX and Alpha resources with Compaq's leading PC and server business and the fault-tolerant expertise Compaq had acquired in Tandem.

The failure of that deal is legend. Before the Digital acquisition, Compaq was a \$20 billion PC company with profits of \$1.3 billion, a 7% margin. In 2000, the company closed the year with twice the sales — \$42 billion — and half the profits — only \$569 million, a 1% margin. And it has since done away with many of the Digital assets, including Digital's prized Alpha architecture.

What's worse, as Compaq was busy trying to stuff the \$10 billion Digital python into its pocket, Dell passed it by as the No. 1 PC supplier.

Big mergers don't work. The rhetoric from HP's Fiorina and Compaq's Capellas is the exact same stuff trotted out by Eric Benhamou in 1997 when 3Com spent \$6.6 billion on modem maker U.S. Robotics (only to dump that business three years later). Essentially: "We've studied the other failures and saw what went wrong, and we can do it better."

Fat chance.

But do HP and Compaq have a choice? After all, both companies are foundering. Based on the value of the deal, Compaq is in particular trouble. By last Wednesday, HP's stock had fallen so much in reaction to the news that the deal only valued Compaq at \$20.5 billion, less than half of Compaq's revenue last year.

If they are lucky, execute flawlessly and realize the potential savings they have earmarked, this deal is one and one makes two — a bigger, more successful company doing what both companies have always done. But if they are to be risked at all, adding two companies in mergers such as this should add up to three — a combination that transforms the business.

This one doesn't add up.

— John Dix
Editor in chief
jdix@nww.com

More on Multi-protocol Label Switching

As conference director for MPLScon and owner of the MPLS Resource Center (www.mplsrc.com), I took an especially keen interest in the story "Experts call MPLS bad for 'Net'" (www.nwfusion.com, DocFinder: 5833).

Unfortunately, it seems the folks you spoke with are spreading fear, uncertainty and doubt about the role of MPLS, as well as raising several red herrings.

First, it is important to note that MPLS is being used for several purposes within today's carrier networks. One area is VPN services; a completely unrelated area is traffic engineering. Many major carriers have embraced MPLS as a tool for routing around the inefficiencies of IP routing protocol path selection. So to say that MPLS is "bad for 'Net'" without clarifying that you are referring to MPLS VPN services is misleading.

Second, a recent report by Miercom noted that the security of MPLS VPNs is equivalent to that of frame relay or ATM private virtual circuits (PVC). MPLS really is just another method to build PVCs, only at the IP layer instead of at Layer 2. The risk of an operator misprovisioning a circuit and losing data is no different than for ATM or frame relay. ATM, frame relay and MPLS VPNs all carry unencrypted IP traffic, and the security risks for all three are identical.

Third, the contention that a company doesn't need MPLS if it has frame relay or ATM is only accurate if the company plans to continue to base its networks on ATM or frame relay. I'm not aware of any carrier willing to conform to that approach given the inherent inefficiencies in carrying high-speed, predominantly IP traffic on ATM. Even more ludicrous is the statement that a company doesn't need MPLS if it has a pure IP network. That is only true if the company wants to offer IP Security VPN services as the

E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.

opinions!

only option, and even in that case, MPLS is still required for traffic engineering.

Irwin Lazar
Senior consultant
The Burton Group
Sterling, Va.

Faster wireless

Your story "Faster wireless LANs may prove a bargain" (www.nwfusion.com, DocFinder: 5834) does not address many of the drawbacks of the 802.11a standard. For example, the 802.11a coverage pattern is smaller than 802.11b's. The cost of an 802.11a access point may be decreasing, but you would need many more to cover the same area covered by an 802.11b net, therefore raising the total cost of the system significantly.

Roger Deane
Technical director
Tech Center, LLC
Atlanta

Regarding your story "Faster wireless LANs may prove a bargain," I take issue with the conclusion that there is no performance difference between 802.11b wireless LANs and 100M bit/sec wired LANs. The issue is that virtually all the 100M bit/sec wired LANs are switched installations, which yield about 100M bit/sec throughput to each connected node. The media of a wireless LAN, the air, is a shared media. Once multiple nodes become active using a common access point, the 54M bit/sec speed gets divided among the nodes. Attempting to use multiple access points in the same area raises the price and the potential for radio interference between the segments.

Bob Rosenbaum
Principal
Little Oak Consultants
Acton, Mass.



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THE BOTTOM LINE

Joel Snyder

Code Red is still going strong. At its peak, one of my company's Web servers saw about 13,000 Code Red attempts per day; last week, we saw about 6,000 per day. At this rate, it'll be months before Code Red goes away — it may never stop completely. What have we learned from this experience?

First, we learned that people don't read security bulletins — or if they do, they don't act on them. The vulnerability that Code Red exploits was announced by Microsoft on June 18, more than a month before Code Red hit. If we're still seeing thousands of attacks per day, a serious number of companies and people are not paying attention.

Microsoft has issued 45 security bulletins this year, more than one per week. System managers are numb from the overwhelming number of patches that need to be applied. Companies can't be expected to handle all of these manually; once patches have been approved, we need better automated tools to distribute them. Find those tools for your platforms and get them into place now. If you're running a data processing center, assign someone primary responsibility for watching for and evaluating security bulletins every day.

Second, we learned that Microsoft can't be trusted to patch its own software properly. Heavy-traffic Web servers with the correct patch might not be infected by Code Red, but they certainly have been affected. We have clients around the world complaining of instability caused by Code Red attacks. There's a fix out there, but it

Learning lessons from Code Red

doesn't appear to be the universal solution.

This is where the open source people really have a leg up. If the official patch isn't solving your problem, at least you have the option of fixing it yourself — if you're running open source software. With Microsoft's Internet Information Server (IIS), the entire world is dependent on a relatively small team of people to fix any problem. If you're running IIS, maybe it's time to re-evaluate that decision. IIS is a great product, but there are other free Web servers that work, ones where you can get the source code and fix it if you absolutely have to.

Third, we learned that traditional firewalls don't help a bit here. If you open up a hole for the Web port on your Web server, then the firewall isn't defining your security perimeter; the Web server is. The question is how well you prepare, not just at the perimeter, but at every system for this kind of problem. There are dozens of tools out there to help protect individual systems, ranging from personal firewalls to kernel-level intercepts. Investigate your options and get some protection up.

Code Red continues to be a disaster. After you've patched your systems so they stop attacking mine, take a look around and see what you can learn.

Snyder, a Network World Test Alliance partner, is a senior partner at Opus One in Tucson, Ariz. He can be reached at Joel.Snyder@opus1.com.

We have learned that people don't read security bulletins — or if they do, they don't act on them.



REALITY CHECK

Thomas Nolle

If we had a dollar for each bill before Congress relating to telecom reform, we could buy the industry out of the current slump. For some, the sheer number of bills, combined with the proven inertia of Congress, spells a long and fruitless period of debate. For others, it seems proof that

Congress is finally preparing to take some action.

This is no straightforward, "it-passes-or-it-doesn't" game. There are three classes of legislation up for consideration. The first group deals with politically safe issues such as tax credits for rural broadband deployment. This part of reform is almost a slam-dunk; nobody will oppose it. The second group is aimed at slapping the Bells harder for noncompliance with the Telecommunications Act of 1996. The third group concerns letting the Bells into the data services market with fewer or no restrictions. How these last two groups of bills might fare in Congress is the question I'll try to answer.

First, it's likely that there will be at least a vote on some substantive reform. The telecom and networking industry has been the fuel driving the whole tech sector, and technology is the fuel behind the economy. We can't really hope for recovery without a big tech rebound, and we can't get that without some real advance in networking's fortunes. High-tech executives have been telling Congress that story, and congressional leaders will probably listen.

Second, it's certain that if anything emerges from Congress, it will be a compromise of the "carrot-and-stick" nature. The Bells want relief from the wholesaling and unbundling requirements of the telecom act in the data services area — that's what the Tauzin Bill, the much-debated House measure, would offer. Bell opponents, mostly the interexchange carriers and supporters of the surviving competitive local exchange carriers, want the penalties for Bell foot-dragging in complying with competitive requirements of the telecom act to be increased. Sen. Ernest Hollings (D-S.C.), Senate commerce committee chairman and chief antiBell player, wants to use the threat of breaking up the Bells into a wholesale and retail component as a "punishment

Telecom bills await Congress

of last resort" for regional Bell operating companies intransigence. It wouldn't take a genius to craft a bill that would do both, and that's probably what will happen.

What's left out of this compromise? Probably us. We're in our current mess because Congress forgot about the data market when drafting the telecom act. They're now remembering data, but forgetting that there are many kinds of data. The critical questions of today will be answered by accident, just the way the telecom act "accidentally" answered how data services were to be regulated: just like voice. What that may do is make even a regulatory change less than completely effective in bringing about the kind of industry we want.

The bills don't address DSL infrastructure support, voice over DSL, streaming video or fiber to the home. Will we have very high bit rate DSL after asymmetric DSL? Will SONET be phased out, pared back, or grow? Is there a hope for voice over IP? None of these questions are really addressed in any of the pending legislation. Might something substantive be introduced in amendments? Sure and, as an old relative of mine used to say, "If fish had feet, they'd be mice." Congress has no track record of dealing with telecom details like that, and yet it will be the details that will determine the shape of the market.

We're going to start, in the next year or so, on a capital buildout for new-generation services that will cost about a quarter-trillion dollars. Do you think if we get it less than just right because of regulatory oversights, we'll get to go back to Wall Street for more money and just do it over? We're stuck with the "network of the future" for the foreseeable future, and the makeup of that network will be decided by little legal nuances in legislation, created as often by accident as by design.

This is a lousy way to try to save an industry, but I'm behind it. I'll smile at Hollings, shake hands with Tauzin, and kiss all the other congressional babies. I'll overlook the tired politics, the "accidental" solutions because bad as this may be, it will be better than nothing.

Nolle is president of CIMI Corp., a technology assessment firm in Voorhees, N.J. He can be reached at (856) 753-0004 or tnolle@cimi corp.com.

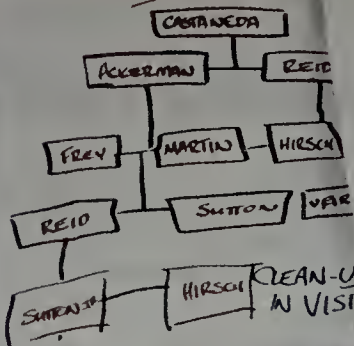
Might something substantive be introduced in amendments? Sure and, as an old relative of mine used to say, 'If fish had feet, they'd be mice.'

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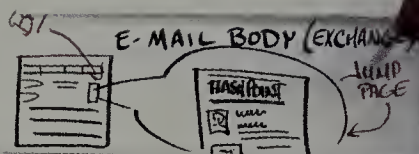
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- 07.09 COMMENTS TO PRINTER
- 07.11 2ND ROUND PROOFS
- 07.16 FINAL PROOF APPROVAL
- 07.23 PRINTING, DIE-CUT
- 07.24 FOLDING, COATING
- 07.31 DELIVERY

4 WEEKS PRODUCTION SCHEDULE (MINIMUM)

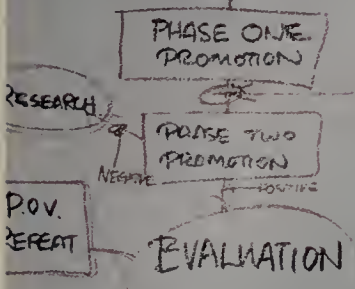
PRESENTATION MATERIALS

- * CONFERENCE TEAM
- LAPTOP
- PROJECTOR
- FLIP CHART
- ANIMATED PPT DEC
- 1/2" HARD COPY
- PADS
- PENS
- WINDOW CE



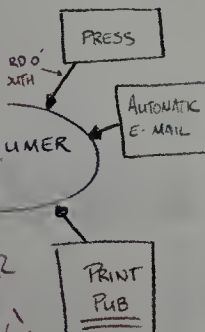
- GOLD OR PL
- CO-OPT W
- FREE LUGG

PROMO PROCESS

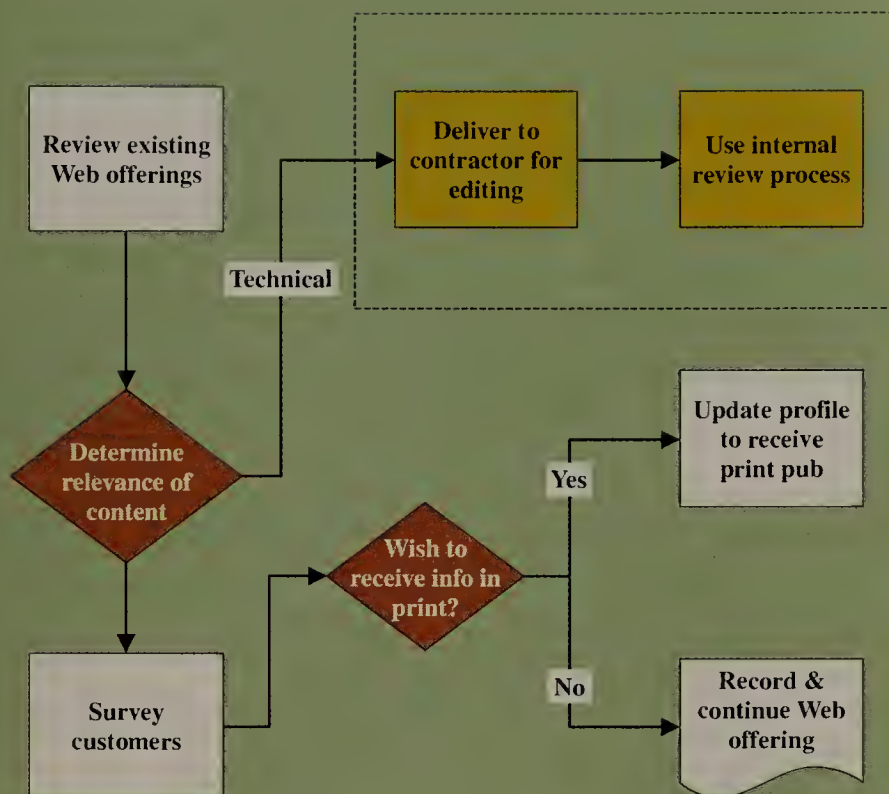


- 8:30 AM - coffee & Pastries
- 9:00 AM - CONVENIENCE
- 9:30 AM - Strategy Overview
- 10:00 AM - Methodology
- 10:30 AM - Results
- 11:00 AM - ACTION PLAN
- 11:30 AM - Quantify Results
- LUNCH -

MIND



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Face-off

Is there really a fiber glut?

Two industry experts debate whether fiber oversupply is fact or fallacy.

YES By Susan Kalla



Adam Auel/MPG

With the free-fall in prices in long-distance telecom over the last year, it's hard to deny there's a fiber glut. Microeconomic rules about supply and demand suggest that when prices destabilize, supply exceeds demand. The steep decline in long-distance prices this year leads to one conclusion: fiber oversupply.

After the passage of the Telecommunications Act of 1996, fiber-optic buildouts increased at an unprecedented rate. Many new service providers entered the telecom market and, along with incumbent players, built out fiber coast to coast. Way too many players built out way too much fiber. From 1997 to 2000, the number of miles of fiber-optic cable deployed more than quadrupled. The number of fiber route miles increased from 3 million in 1997 to 12 million by the end of last year. More significant was the incremental change in fiber miles added to the installed base of fiber miles each year. New fiber buildouts increased by 239% in 1998, 72% in 1999 and 116% in 2000, according to research done by Friedman, Billings, Ramsey & Co. That's a lot of fiber. At the same time, technological advances in dense wavelength division multiplexing allowed network designers to pump through 160 channels of information per each fiber-optic cable. Network engineers estimate the utilization rate of the new lit fiber is low, perhaps 40%. Carriers usually need network efficiency levels of 60% to 70% per channel to operate profitably.

The service providers underestimated how much fiber would be deployed between 1998 and 2000. Then, making the situation worse, they overestimated demand. They built it and nobody came.

The commodity bandwidth trading market is a leading indicator for pricing direction in the long-distance industry. Prices in the commodity bandwidth market have dropped 80% in nine months, which is more than the average price drop for the telecom industry. Another leading indicator of pricing for long-distance is trading volume on popular routes. In the commodity bandwidth market, strong trading volume gives prices a chance to stabilize. But in August, transactions in the commodity market slowed to a crawl. Bandwidth traders claim it is difficult to find any customers for any routes, especially the most popular (that is, overbuilt) routes, such as New York to Los Angeles and New York to London.

As we look into historical capital spending, we realize that 2000 may have been the peak year for fiber buildouts. Carriers will have to pay hefty interest rates to continue to aggressively spend on capital. Their expensive capital structure may raise the bar to break-even and make it difficult to defend the business proposition for more fiber buildouts.

Kalla is a senior vice president and equities analyst covering the telecommunications industry at Friedman, Billings, Ramsey, & Co. in Arlington, Va. She can be reached at skalla@fbr.com.



John Suchocki/MPG

NO By Daniel Briere

You're sitting in bumper-to-bumper traffic on I-880 in San Jose. Nothing but stopped cars as far as you can see. Then a radio announcer says there's enough space on the nation's highways to handle a fiftyfold increase in traffic, and because of this, financial analysts expect stock in road construction companies and equipment to be depressed for some time.

Arguments like this — but in the fiber world — have sucked the wind out of the optical marketplace. But this argument is flawed, outdated and out of touch, for three reasons.

First, telecom is complexly inter-related. Failures in one part of the industry spread to other parts, and probably no part of telecom will affect the industry's future more than fiber optics.

Second, gluts imply a stagnant market, which mandates slow or no sales, meaning companies have to wait for sales to pick up. As research and development and other growth-oriented programs pull back, more of today's network problems will stick with us longer and get much worse.

Third, glut only matters to you if it's in your area. If your regional long-haul links are congested, that means more route-arounds and more latency. Empty roads in North Dakota hardly matter when you're stuck in San Jose traffic.

TeleChoice put together a route-by-route view of what's going on among the major cities in the U.S., indicating:

- Much of industry analysis focuses on unlit fiber in the ground; however, the critical supply variable is available capacity — lit fiber.
- A provider's decision to make additional capacity available is evaluated on a route-by-route basis, not a nationwide basis.
- Having excess fiber in the ground is not a bad thing, despite analysts' arguments. Available capacity must always lead demand by at least 30% per route to avoid the severe capacity constraints and long service waiting lists users in other countries face.
- On 14 of the 22 routes TeleChoice analyzed, indications are that current demand equals or exceeds 70% of total supply across all carriers.
- Even considering unlit fiber, there's not as much as many believe. In two out of three viable future industry scenarios we've evaluated, the industry completely runs out of fiber on all major intercity routes by 2004.

This is not a reason to start writing our telecom wills. The smart carriers are using tools to accurately predict what's going on. But financial analysts touting nationally averaged numbers and specific application growth figures are painting an inaccurate picture, squeezing the optical space and stifling innovation that will dramatically affect the services you and I ultimately have in our areas.

Briere is CEO of TeleChoice, a market strategy consultancy for the telecommunications industry. He can be reached at dbriere@telechoice.com.



More online!

- Log on to Network World Fusion to register your opinion. FBR's Susan Kalla and TeleChoice's Daniel Briere will add their thoughts to the discussion.

DocFinder: 5922

BY SHARON GAUDIN AND SUZANNE GASPAR

One Friday afternoon in January, Internet Billing Company — one of the five most visited business-to-business sites on the Web — suddenly found online transaction requests from its customers were being blocked.

The reason was that iBill's name popped up on an antispam group's blacklist that as many as half of the ISPs in the U.S. use to block e-mail and IP traffic from alleged spammers.

Amazingly, no one had ever accused iBill of sending spam. However, someone complained to the antispam group Mail Abuse Prevention System (MAPS) that one of iBill's thousands of customers had spammed them. MAPS not only placed the accused spammer on its Realtime Blackhole List (RBL), it listed iBill's entire block of 254 IP addresses as well.

"We didn't know what was going on," says Marty Essenburg, iBill's CIO at the time, who estimates that the four-day blacklisting cost iBill \$400,000 in lost revenue. "There was no warning. It was automatic, and we had to sit back and play catch-up. They hurt our revenue stream, and they tell us how to do business."

**Tactics used by
self-appointed
spam fighters
come under fire.**

The

Spam
police

Vigilantes usurp the authority of the police. When there are no police, we are our own cops.

Kelly Thompson

Vice president of the Forum for Responsible and Ethical Email (FREE)

IBill, a \$500 million company, is just one of the legitimate businesses caught in the crossfire between antispam activists who create the blacklists and the bulk e-mailers who see the Internet as an inexpensive alternative to mass marketing via snail mail. Most everyone agrees that spam or unsolicited e-mail, such as online pornography, weight-loss programs and get-rich schemes, is a serious problem. Spam accounts for as much as 50% of an ISP's e-mail traffic flow and forces ISPs to add hardware, technicians and customer representatives to handle the deluge and its fallout of consumer complaints.

AOL Time Warner says it spends up to 15% of its users' monthly fees fighting spam. AT&T spends \$35,000 per month, and WorldCom has 30 people dedicated to spam. The large ISPs can afford internal spam fighters to investigate complaints and enforce acceptable use policies; midsize to smaller ISPs tend to use blacklists.

But critics charge that MAPS and other self-appointed sheriffs of the Internet have overstepped their bounds, wielding great power without any authority. "MAPS is a nuisance. They're like vigilantes," Essenburg says.

"They are private sheriffs," says Jonathan Zittrain, co-director of the Berkman Center for Internet and Society at Harvard University. "They don't have any

duties of due process. They can just list anybody."

Kelly Thompson, until recently a senior manager with MAPS, and currently vice president of the Forum for Responsible and Ethical Email (FREE), rejects that charge. "Vigilantes usurp the authority of the police. When there

are no police, we are our own cops," she says.

With no government agency in charge of policing the Internet, a community developed to tackle the problem, each with a different function (see chart, page 60). "People see a niche to be filled and say, 'I have an

ISPs and spam police

The large ISPs and the antispammers have a somewhat uneasy relationship.

Both are on the same side in the fight against spam. But large ISPs such as EarthLink, WorldCom, AT&T and AOL Time Warner don't use the MAPS blacklists; they have internal spam teams that respond to customer complaints and enforce acceptable use policies.

These ISPs work with their customers to close open relays, enforce opt-in policies and encourage end users to filter e-mail.

They don't go along with the more hard-line approach of server-level blocking that antispammers advocate.

In a somewhat strange twist, these ISPs—which, after all, are the real victims of spam—sometimes find themselves on the spam cops' blacklist because one of their customers sends out spam.

Craig Silliman, director of the network and facilities legal team for WorldCom, is periodically forced to defend WorldCom against spam charges, even though they've never been blacklisted.

Adds AT&T spokesman Bill Hoffman, "Like law enforcement, we react, investigate and collect data, but sometimes antispam groups say we don't act fast enough."

interest and I can do that.' There might be somebody more qualified to do it, but if they're not doing it, it still needs to be done," Thompson says.

The antispammers see themselves as crusaders in the battle to eradicate spam.

MAPS founders Paul Vixie and Dave Rand (see the question and answer with Rand at www.nwfusion.com, DocFinder: 5921) are Internet veterans; others are ISP operators or people who have been personally affected by spam.

As much effort and ammunition as the antispammers throw at the problem, the spammers answer with new tactics and renewed vigor. Observers say the volume of spam is increasing, the blacklists are getting longer and more mail is getting blocked.

"I wouldn't say it's getting any better right now. It's an incremental arms race now with spammers finding more and varied ways of getting their mail through," says Julian Haight, owner and administrator of SpamCop.

Guilty until proven innocent

Antispammers say tough times call for tough measures.

"My goal is not to do no harm first," says Haight, who for two years has blacklisted companies for a week after a single complaint.

"We list you immediately, and then we can talk about it ... I look at it as what we need to do to effectively filter out the spam. If you're innocent until proven guilty it's not an effective [way] to filter out the spam," he adds.

Today, Haight says he's changing his policy. Instead of blacklisting companies or huge ISPs such as AOL or WorldCom for a single complaint, users can decide how strict or lenient they want the blacklist to be, based on the ratio of good e-mails to bad.

Critics say antispammers practice guilt by association, blacklisting not just the spammer, but legitimate businesses — such as iBill — that are associated with an accused spammer.

"There's a lot of times when 'legitimate' is a difficult word in this business," Thompson says. "We perceive that spam-friendly behavior as a direct threat to our network, and it's our responsibility to protect our network. If you happen to be on the same Web server [as a spammer], that's unfortunate and that's not what we are intending to do."

Essenburg says when he asked why iBill was blacklisted instead of the one accused customer, "MAPS says they listed iBill because they could ... to stop the customer and get them where it hurt by going through iBill."

MAPS' Web site says it will blacklist an ISP that sells connectivity to a spammer; sells software or services to a spammer; hosts a spammer; or handles online transactions for a spammer.

"Collateral damage" or "casualties of war" are what antispammers call cases such as iBill's.

The face of collateral damage

Ron May, MIS manager for SearsCarpet.com, a franchise carpet and upholstery cleaning service in Columbus, Ohio, knows all about collateral damage. May says SearsCarpet.com's e-mail server was blacklisted by MAPS without warning, stranding 25 telecommuters who couldn't send mail for two-and-a-half weeks and bouncing back 40% of outgoing e-mail messages.

During a seven-week period, May's small IT department spent \$25,000 in staff time trying to get off MAPS' blacklist and reconfigure 150 user workstations. All because a hacker used an open relay on May's network to send out millions of spam messages.

MAPS spokeswoman Margie Arbon says MAPS' policy is to notify businesses before putting them on the RBL, but in the case of an open relay, the company's name immediately goes on a separate list.

"I've been in IS for 20 years and never had a problem

so hard to fix," May says. "There's no appeals process once you're blacklisted. The MAPS folks were arrogant and pompous to deal with. They're out of control."

Arbon says workers at MAPS help people as much as they can, but there are limits as to what they can do. She says MAPS receives 100 complaints a day, 50 of which are deemed legitimate.

The person who filed the complaint is asked to contact the originator of the spam and explain the problem to him first.

If that doesn't work, MAPS, with three full-time investigators, steps in to look into the complaint and contact the alleged spammer.

But the accuracy of the MAPS' blacklist has been

called into question.

David Nelson, a senior industry analyst at Giga Information Group, says a recent study found that Brightmail, a for-profit blacklisting and filtering service, blocks 94% of spam with 1% false positives. However, MAPS was found to block 24% of spam with 34% false positives.

Thompson refutes those numbers. "I'm not aware of anybody who shouldn't have been listed and has been listed," says Thompson, who was drawn into the spam wars after a small network she ran in 1996 was shut down for several days because of a spam onslaught.

See Antispam, page 62

The spam police force

★ SpamCop (www.spamcop.com)

WHAT IT DOES: Free service that helps users report spam to the actual sender. Fee-based service that filters spam from a user's inbox, using a blacklist and whitelist. **WHO RUNS IT:** Founded and run by Julian Haight, a consultant for several years. Haight started working on SpamCop to help fight his own spam and to practice Perl programming. He has one paid assistant and 10 volunteers. **CUSTOMERS:** About 4,000 users pay for the filtering service. SpamCop receives about 50,000 complaints a day. **HAIGHT SAYS:** "We list you immediately, and then we can talk about it."

★ Spamhaus (www.spamhaus.org)

WHAT IT DOES: Nonprofit organization in London that tries to identify professional spammers and spamware vendors. ISPs and users can query Spamhaus' list free of charge. **WHO RUNS IT:** Steve Linford, a computer programmer and systems developer since the mid-1980s, is the founder and head. Linford owns a British ISP, which funds Spamhaus. There are eight Spamhaus workers — all volunteers. **CUSTOMERS:** Spamhaus gets 10 million queries per year to its database of spammers. **LINFORD SAYS:** "Since there is no police force on the Internet, you are your own police force. Everyone has the power. The Internet is not a big public network. It's a network of private networks. It's owned by the people who have paid for the equipment, and they don't want spam coming through and plaguing them."

★ Mail Abuse Prevention System (MAPS) (www.mail-abuse.com)

WHAT IT DOES: MAPS is a nonprofit organization in California that sells a database — or blacklist — that is used by ISPs to filter the e-mail entering their networks. **CHARGES:** As of July 31, MAPS stopped offering free access to its databases. ISPs now must have a signed contract with MAPS. Querying MAPS' Realtime Blackhole List would cost roughly \$1,500 per year, per mail server. **CUSTOMERS:** MAPS analyzed its site traffic recently and found that 22,000 ISPs queried its lists in a 24-hour period. **SIZE OF THE BLACKLIST:** MAPS esti-

mates it has 4,700 listings on its RBL. A single listing could have 250 IP addresses on it, increasing the number of networks listed.

WHO RUNS IT: David Rand is the executive director. Rand and Paul Vixie, both Internet veterans, are the co-founders and shareholders. Vixie has stepped back from day-to-day operations to focus on his job as president of PAIX.Net. The company has 12 full-time workers, along with a volunteer task force (see question and answer with David Rand online at www.nwfusion.com, DocFinder: 5921).

★ Coalition Against Unsolicited Commercial E-mail (CAUCE) (www.cauce.org)

WHAT THEY DO: CAUCE is a grass-roots coalition of Internet users and system administrators promoting a legislative solution to the spam problem. **SIZE OF ORGANIZATION:** CAUCE has about 30,000 members, who sign up online with no membership fee. There is a core group of about seven people who volunteer to discuss policy, speak at events and lobby legislators. **WHO RUNS IT:** The chairman of CAUCE is Scott Hazen Mueller, a system administrator and consultant, who has been active in the antispam movement for about eight years. **POLICY:** CAUCE is pushing for federal anti-spam legislation. There are several e-mail spam bills now but CAUCE doesn't support any of them, saying that the bills fall short of being effective. **QUOTE:** Co-founder and vice-president **JOHN MOZENA SAYS:** "The whole point behind legislation is to remove as much of the need as possible for barbed wire and guard dogs that people throw up around their mail servers."

★ Brightmail, Inc. (www.brightmail.com)

SIZE OF THE COMPANY: Brightmail, located in San Francisco, employs more than 90 people. **WHAT THEY DO:** Brightmail is a fee-based service with a software component, available to service providers and enterprises, for deploying server-based filtering. The filter checks incoming e-mail messages against rule sets, which are auto-updated to customers every 5 minutes. Brightmail harvests actual spam messages via e-mail boxes positioned around the Web. Five employees, called Spam Masters, analyze the e-mail looking for spam. **COST:** Entry-level pricing for 5,000 to 10,000 mailboxes is \$1 to \$5 per mailbox, per service, per year. **CUSTOMERS:** Brightmail filters about 100 million e-mail addresses for 30 customers, including EarthLink, MSN, Excite@home and WebTV.



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Antispam, continued from page 60

Double secret probation

But Black Ice Software, a small fax, voice and imaging software developer in Amherst, N.H., would dispute that statement.

CEO Jozsef Nemeth says MAPS contacted him in March 2000 requesting Black Ice change the way it conducts business with its customers. When someone downloads Black Ice software, the company sends an e-mail thanking the person and listing technical support information.

Black Ice later sends periodic e-mail marketing materials to those customers, which includes a provision that lets recipients unsubscribe.

MAPS told Black Ice it had to switch to an "opt-in" system or its e-mail would be considered spam and it would be listed on the RBL. Opt-in means Black Ice would have to e-mail the customer to confirm that the customer wanted to receive the marketing material.

"A customer provides you an e-mail address, and then you e-mail them and ask, 'Are you sure you want to give me your e-mail address?' And you need to wait to get e-mail back saying yes. That's ridiculous," Nemeth says.

When Nemeth refused to go along with MAPS, his company was slapped on the RBL, even though Black Ice could hardly be classified as a major bulk e-mailer. "We found our e-mail bouncing back and had customers calling to complain they couldn't reach our FTP server to download the software they had purchased," Nemeth says.

After lawyers for both sides failed to reach agreement on the opt-in policy, MAPS sued Black Ice for allegedly violating California antispam statutes.

Black Ice is now suing MAPS on the grounds of interference with business relationship, unfair business practice and unlawful restraint of trade. Black Ice hopes to recoup its \$400,000 legal fees and collect \$500,000 for damages.

Since the initial listing, Nemeth says Black Ice has lost \$15,000 per month in banner advertising and sales revenue, and has had to lay off four employees.

"[MAPS] came to my store and mugged me. They wanted to set a legal precedent, and wanted a small company with limited money to fight them," Nemeth says.

"He could have easily avoided that by simply changing his policy," Thompson says. "Just go ahead and confirm subscriptions."

Thompson also says, "I'm not telling you how to run your business. I'm telling you what you need to do to stay off the RBL. You're free to adopt any policies you want. And I'm free to make decisions about whether I'm going to accept or reject your traffic," Thompson says.

Black Ice isn't alone in standing up to MAPS. Harris Interactive, which conducts the Harris Poll, bulk e-mailers YesMail and Exactis, and Web hoster Media3 Technologies have taken on MAPS in court. YesMail and Exactis won temporary restraining orders that kept them off the blacklist.

What next

Even the most ardent anti-spammers concede that the problem isn't going away anytime soon.

Haight points out that as open relays are being closed, spammers are turning to new methods. Those include exploiting Web sites' Common Gateway Interface (CGI) scripts meant to help users send e-mail to the site's own Webmaster and exploiting a hole in the Wingate Proxy, a home networking feature



If you're innocent until proven guilty, it's not an effective [way] to filter out spam.

Julian Haight
SpamCop

in Microsoft Windows software, to send out millions of e-mails.

"Spam is like crime. You can hire more cops, but you'll still have robbers and more desperate people doing desperate things," says Bill Hoffman, an AT&T spokesman.

Steve Linford of Spamhaus is pinning his hopes on Congress passing a tough antispam law, because more than 90% of spam originates in the U.S.

Several states have passed spam legislation, but none have withstood legal scrutiny, running up against constitutional issues such as free speech. No federal bills have been passed, and those on the table lack support from key Internet players because they are considered too weak.

"In the political process, laws get watered down and compromises are made," says David Sorkin, Internet law professor at John Marshall Law School in Chicago. "Sometimes compromise legislation is worse than no legislation at all. It legitimizes it... I don't think any approach on its own is likely to work."

And that's one thing that most agree on. Eradicating spam will only happen if it's attacked from all sides. "You have to approach it on all fronts at the same time," Haight says.

Here's a list of steps, culled from those in the battle against spam, that need to be taken:

More online!

- David Rand Q&A.
- List of spam-related URLs.
- Network World's e-mail policy.
- Join the spam forum.

DocFinder: 5937

- Network administrators need to use filters to block spam.
- Congress needs to pass strong legislation.
- Network administrators also need to close open relays and other exploitable holes in programs such as Wingate proxy and CGI scripts. ■

How the blacklist system works

Anyone who thinks they have received spam can file an e-mail complaint with the Mail Abuse Prevention System hotline.

According to MAPS, a staffer investigates each complaint and if the investigator decides that the offending e-mail is spam, MAPS tracks down the company that sent the spam and then negotiates with and tries to educate the company about acceptable e-mail practices. If that doesn't work, the company is blacklisted.

Once an address is listed, all ISPs that subscribe to the RBL automatically filter out traffic from the accused spammer's address space.

According to MAPS, the only way to get off the list is to abide by their policies.

There are many ways to be blacklisted:

- Sending unsolicited bulk e-mail.
- Using an opt-out policy instead of an opt-in policy.
- Leaving an open-relay on your network.
- Hosting Web pages that are promoted by spam.
- Providing e-mail drop boxes promoted by spam.
- Providing banner ads, script processing or hit counters for sites promoted by spam.
- Providing credit card processing for sites promoted by spam.
- Providing software for distributing spam.
- Hosting Web pages for those who provide software for distributing spam.
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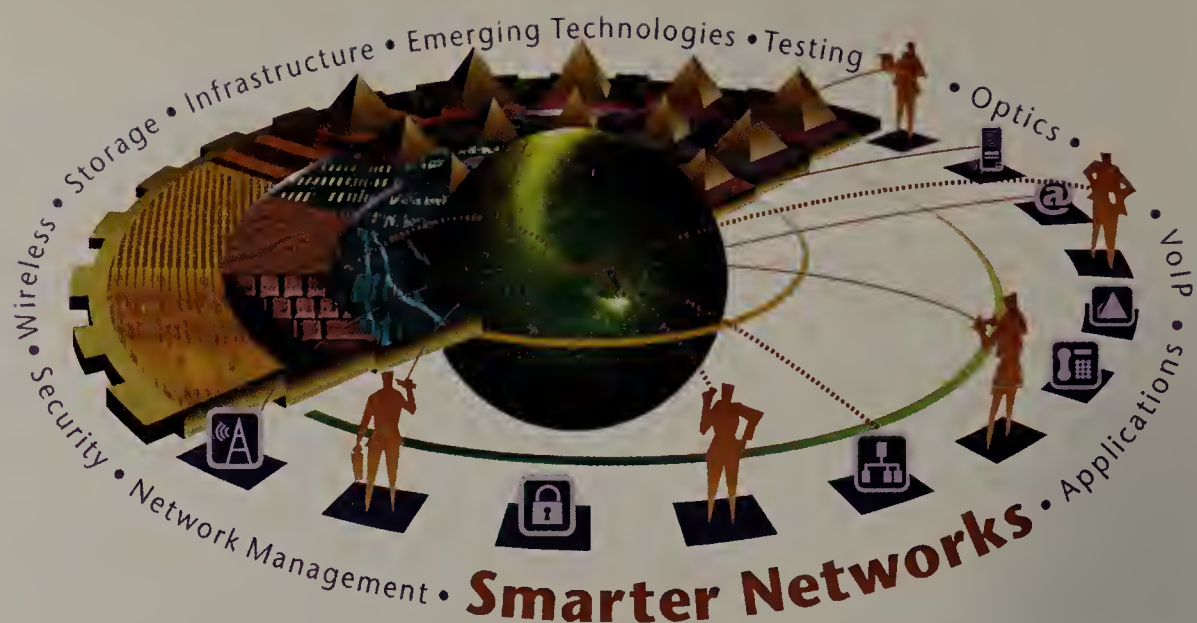
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LAN switch interoperability:

Thirdtime's

Tolly Group/*Network World* test shows LAN switch vendors are reaching new levels of interoperability.

■ BY CHARLIE BRUNO AND BRIAN TOLLY

In Round 3 of The Tolly Group/*Network World* LAN Switch Interoperability Study, some of the market's more aggressive vendors proved that they've made significant strides, not only with regard to basic interoperability, but also specialized functions and services.

The Tolly Group conducted interoperability tests on 10 switches from seven vendors, including Enterasys Networks, Extreme Networks, Foundry Networks and NEC. Noticeably absent from this round were Cisco, Hewlett-Packard, Nortel, 3Com, Intel and Lucent. Most cited a lack of resources for their failure to participate.



Engineers connect LAN switches during the third annual *Network World* switch interoperability test conducted recently in New Jersey by The Tolly Group.

We used the same four mandatory tests we've had in place since the inception of the program and added six optional tests that gauge everything from quality-of-service (QoS) capabilities to Gigabit uplink support between different brands of switches. Unlike last year, when only a few vendors ventured into the optional waters, this year virtually every vendor took the plunge into the optional tests. The good news is that no matter what we threw at the participating switches, they handled it deftly and demonstrated interoperability.

■ W H A T W E T E S T E D

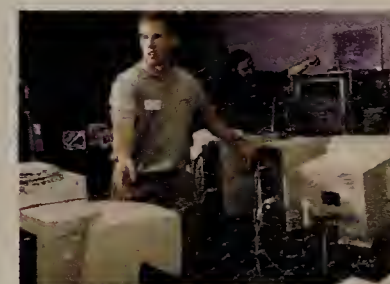
The mandatory tests stress essential switch interoperability capabilities, such as autonegotiation, Open Shortest Path First (OSPF) protocol, Routing Information Protocol 1 and RIP 2.

Autonegotiation assures users that switches will attain the highest common denominator for link speed and full/half-duplex state, thus ensuring no collision or transmission delays. The remaining mandatory tests address methods for switches to update routing tables dynamically. If a switch fails the RIP or OSPF tests, a network manager may be

forced to define static routes manually, which is time-consuming and prone to human error.

The optional tests focus on functions that may be critical to network interoperability, depending upon the network environment. The biggie here is our introductory testing of 802.1p/Q support, which provides QoS across switches.

We also tested interoperability when these switches established Gigabit Ethernet uplinks, support for the Virtual Router Redundancy Protocol (VRRP),



PHOTOS: MARIANNE BARCELONA

Accelerated Spanning Tree reconvergence, support for IPX routing in Novell NetWare environments and support for link aggregation.

The suite of tools we used to carry out these tests consisted of Spirent Communications' SMB-200 and Smart-Flow 2.0 software, Acterna's DominoFastEthernet and NAS 2.0, and Agilent Software's Software Advisor.

Highlights

In the mandatory autonegotiation tests, all 10 products passed the interoperability challenge, delivering a full 100M bit/sec, full-duplex connection among the disparate switches. In the RIP 1 and RIP 2 tests, all products handled routing table exchange and demonstrated interoperability. Likewise, all products interoperated in OSPF

tests. OSPF simply sends changes to routing table updates to other switches, whereas RIP multicasts the entire table to neighboring routing hosts.

On the optional test side, the most intriguing interoperability hurdle passed was in the 802.1p/Q realm. Once again, all 10 switches proved interoperability, but it's important to note that this test simply examined a switch's capability to forward a virtual LAN (VLAN) tag (with priority bit set) without modification to the frame. This means that even though a frame may carry data tagged with the highest priority, the other switches that handle it will not alter the priority rating. Queue management issues still remain untested. Because vendors are free to implement between two and eight traffic queues, a frame with a higher priority than two may be passed off to a

switch that supports just two traffic queues and, therefore, will be left to fight for bandwidth with other traffic lumped into the same bucket.

The results of the optional Accelerated Spanning Tree interoperability is significant because of the fact that three vendors — Enterasys, Marconi and NEC — opted not to test because the standard for this capability has not yet been set. It is notable, though, that six switches passed our interoperability test using nonstandard implementations of the Accelerated Spanning Tree specification, which is a good omen for interoperability once the IEEE ratifies the specification. In this test, each vendor's switch demonstrates its capability to reconverge its Spanning Tree configuration with other brands of switches in the network and begin passing traffic 10 seconds after a device failure.

S P E C I F I C S

Test 1: Link speed/duplex autonegotiation (mandatory)

We configured adjacent ports on the switches to negotiate speed and duplex support automatically. The two switches were connected via a Category 5 crossover cable. We determined, via the switch consoles, the speed and duplex settings reported by each. If both reported configurations were identical, we generated a stream of 1,518-byte frames for 1 minute. If the switches reported 10M bit/sec, we generated more than 10M bit/sec in each direction to confirm the speed setting.

All switches passed. This assures users that switches employing autonegotiation will attain the highest possible common denominator for link speed and full/half-duplex state, thus ensuring no collisions or transmission delays between them.

Test 2: RIP 1 (mandatory)

We configured the two switches under the test for RIP 1 with no static routes. We validated that no static route entries appeared and that routing tables were empty at the beginning of the test. We verified that the switch pairs exchange routing table information via RIP by confirming that the switches interpreted updates properly and successfully forwarded IP packets when no static address entries were present.

All switches passed. Thus, no matter what brand of switch, the devices will update routing tables without incident.

Test 3: RIP 2 (mandatory)

We configured two switches under the test for RIP 2 with no static routes. We validated that no static route entries existed and that routing tables were empty at the beginning of the test. Thereafter, we validated successful forwarding of traffic and confirmed that each switch contained the appropriate routing information in its IP routing table.

All switches passed.

Test 4: OSPF (mandatory)

We configured the switch pairs under test for OSPF with no static routes and then validated that no static route entries existed and that routing tables were empty at the beginning of the test. We then validated successful forwarding of

traffic and confirmed that each switch contained the appropriate routing information in its IP routing table.

All switches passed. OSPF is another means of updating routing tables, though it is considered more robust and efficient than RIP 1 and RIP 2.

Test 5: 802.1p/Q (optional)

We configured each switch pair under test for 802.1p/Q. We then generated a data-stream of 100 1,518-byte, VLAN tag and priority frames destined for the remote switches' private network. We validated the state of the packet upon exiting the first switch for the destined remote network. SmartBits counted all frames received maintaining the 802.1p/Q VLAN tags. We repeated this test in the reverse direction.

All switches passed. But tread carefully. While these switches may pass the tags without modifying them, that doesn't do anything about queue management. So a tagged frame with a high-priority level marked on one switch may be lumped into a lower-class category on another switch that supports fewer traffic queues.

Test 6: Link aggregation (optional)

Each of the switches tested were configured for link aggregation across two ports, preferably full-duplex Fast Ethernet, if supported by both switches. We then generated bidirectional traffic streams

consisting of 1,518-byte packets at a load that exceeded the bandwidth of a single port and validated successful receipt of more traffic than a single, full-duplex link could forward.

Nine of the 10 switches passed this test, demonstrating that two or more Fast Ethernet links could be aggregated between them with an effective throughput that exceeds the bandwidth of a single, full-duplex link.

NEC elected not to participate because it was the only vendor with a link aggregation implementation that supports the newly defined IEEE 802.3AD specification for link aggregation. Because the standard is so new, few vendors have implemented it. Participating vendors instead tested their own proprietary implementations of link aggregation that are based upon an early draft version of the 802.3AD specification.

Test 7: Accelerated convergence of Spanning Tree (optional)

We initiated a sequence of pings at one-second intervals and validated that the request and response crossed the same path. We then powered off the switch on that path and monitored the number of sequential pings lost before the network reconverged and the pings were successful.

Unlike last year, when only Cisco and

Foundry tested switches, in this round six of the nine vendors passed the test. In passing, each vendor's switch demonstrates the capability to reconverge its Spanning Tree configuration and begin passing traffic to other network switches 10 seconds after a device failure using Bridge Protocol Data Units. Participating switches had to reconverge the network in less than 10 seconds to receive a passing grade, which is a vast improvement over the 30-second reconvergence with traditional Spanning Tree.

Enterasys' X-Pedition ER16, NEC's IP8800/730 and Marconi's ESR-5000 did not support Accelerated Spanning Tree at the time of testing.

Test 8: Gigabit Ethernet uplinks (optional)

Each switch must pass traffic across a single, full-duplex Gigabit Ethernet link connecting the dissimilar switches.

We configured participating switches to support a common Gigabit Ethernet (1000Base-SX) link between them for Layer 2 forwarding. We generated data between separate Fast Ethernet LANs across the Gigabit Ethernet uplink to validate connectivity.

All 10 switches passed. This shows that users with one brand of core network

See Switch, page 68

Interoperability results

In the four mandatory tests, all the vendors' gear interoperated. In the more advanced optional tests, interoperability was achieved the majority of the time.

	802.1p/Q	Accelerated Spanning Tree	Gigabit uplinks	IPX routing	Nonstandard 802.3 link aggregation	VRRP
Alcatel OmniCore 5000	All	2,3,5,6,7,8	All	2,3,4,5,6,7,8,9	2,3,4,5,6,7,8,9	Not tested
Alcatel OmniSwitch/Router	All	1,3,5,6,7,8	All	1,3,4,5,6,7,8,9	1,3,4,5,6,7,8,9	3,4,5,6,7,8,9,10
Anritsu MultiFlow 5128	All	1,2,5,6,7,8	All	1,2,4,5,6,7,8,9	1,2,4,5,6,7,8,9	2,4,5,6,7,8,9,10
Enterasys Networks X-Pedition ER16	All	Not tested	All	1,2,3,5,6,7,8,9	1,2,3,5,6,7,8,9	2,3,5,6,7,8,9,10
Extreme Networks Alpine 3804	All	1,2,3,6,7,8	All	1,2,3,4,6,7,8,9	1,2,3,4,6,7,8,9	2,3,4,6,7,8,9,10
Extreme Networks Black Diamond 6808	All	1,2,3,5,7,8	All	1,2,3,4,5,7,8,9	1,2,3,4,5,7,8,9	2,3,4,5,7,8,9,10
Extreme Networks Summit 48	All	1,2,3,5,6,8	All	1,2,3,4,5,6,8,9	1,2,3,4,5,6,8,9	2,3,4,5,6,8,9,10
Foundry Networks BigIron 4000	All	1,2,3,5,6,7	All	1,2,3,4,5,6,7,9	1,2,3,4,5,6,7,9	2,3,4,5,6,7,9,10
Marconi ESR-5000	All	Not tested	All	1,2,3,4,5,6,7,8	1,2,3,4,5,6,7,8	2,3,4,5,6,7,8,10
NEC IP8800/730	All	Not tested	All	Unsupported	Not tested	2,3,4,5,6,7,8,9

KEY	1. OmniCore 5000	3. MultiFlow 5128	5. Alpine 3804	7. Summit 48	9. ESR-5000
	2. OmniSwitch/Router	4. X-Pedition ER16	6. Black Diamond 6808	8. BigIron 4000	10. IP8800/730

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IT IS AN INDISPUTABLE FACT in the e-business world that the speed at which revenues flow from new applications is directly related to the speed at which these applications can be deployed. Quickly deploying these applications is the cyber-world's equivalent of rapidly building brick-and-mortar storefronts to capture new customers.

And because new business applications can sometimes generate sudden and sustained bursts of increased business activity, the underlying network infrastructure must be both scalable and full-featured to support the demands of client services.

To meet these and other lofty requirements of Internet business applications, Cisco Systems offers the Catalyst 6500 Series platform for both enterprise and service-provider networks. In addition to being the fastest switch series available today, the Catalyst 6500 Series is designed from the ground up to address the toughest network challenges, including:

- High availability, performance, and scalability
- Intelligent multilayer switching
- Increased requirements for gigabit switching density
- Voice and data integration
- LAN/WAN/MAN convergence

PROOF POSITIVE

"With the recent introduction of the Cisco Catalyst 6513, the latest member of the Catalyst 6500 Series," says Ben Goldman, manager, product marketing for the Catalyst 6500 Series, "Cisco has proven that we can continue to scale bandwidth, performance, and density while maintaining line-rate intelligent services."

That's been borne out by independent lab tests of Cisco's Catalyst 6509 and Catalyst 6513 switches, which showed stunning aggregate throughput with equally stunning services enabled performance. Test engineers from Princeton, NJ-based Miercom, a leading independent product testing lab, put the switches through a comprehensive set of tests that included "abnormally stressful tasks and network failures."

Even under extreme duress, the Catalyst 6500 series switches delivered "full line-rate performance with low levels of latency and no packet loss, no matter how large the packet in the test." By maintaining a consistent and low level of latency, the switches' performance clears a major and business-critical hurdle in supporting delay-sensitive applications, including IP telephony and video conferencing.

When Miercom's engineers configure the Catalyst 6500 Series switches with multiple advanced features, the switches suffered no performance degradation or changes in latency. And as shown in the chart, the aggregate throughput of each switch equaled the theoretical maximum—better than 210 Mpps, for the Catalyst 6513. (A complete report of this stunning test is available as a printable PDF at www.cisco.com/go/6500miercom).



Cisco Systems offers the Cisco Catalyst 6500 Series platform—with the latest Catalyst 6513 Switch.

Moreover, Miercom's tests found that the Catalyst 6500 switches continued to provide advanced services while consistently maintaining performance under heavy traffic loads. Such performance and service provisioning is vital for environments in which users expect a switch to maintain peak performance, even if it is employing multiple advanced features while being hit with various network flaps and glitches.

CATALYST FOR QUALITY

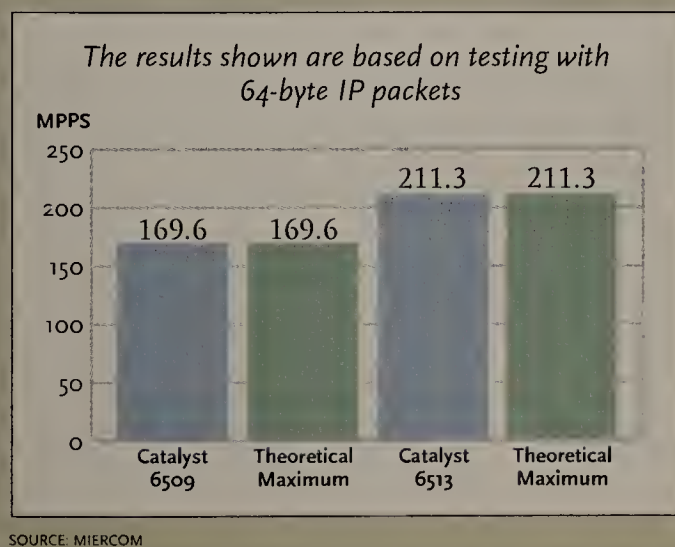
The Catalyst 6500 Series supports Cisco IOS software, which delivers a comprehensive suite of services for managing network security, allocating and enforcing QoS, and enabling network resilience. Quality of service is the lifeblood of Internet business applications. In its tests, Miercom simulated various system failures, and each time the Catalyst switches posted the "exact same results, confirming that common logic failure has no effect on QoS enforcement."

"For today's enterprise and service provider networks, it is essential to have the capability to deploy Internet business applications on a highly scalable infrastructure," notes Peter Alexander, vice president of marketing at Cisco's Internet Systems business unit. "The Catalyst 6500 Series is not only scalable, it also has the high availability and key network services required by today's most demanding business environments."

The Catalyst 6500 Series is a key element of the Cisco Content Networking architecture, designed to deliver Internet business applications including e-commerce, supply chain management, and workforce optimization.

For more information on the Catalyst 6500 Series and on Cisco's Internet networking solutions, click on www.cisco.com/go/catalyst6500.

Throughput to the Max



Switch, continued from page 66

switches supporting Gigabit Ethernet can support aggregated Gigabit Ethernet links with downstream edge switches of another brand. Moreover, different brands of core switches also can share aggregated Gigabit Ethernet links

Test 9: IPX routing (optional)

We configured each of the switches for one interface connected to a common network with an IPX network number of 0d100 and a private network number of 0dX. Both interfaces were configured for Ethernet II encapsulation. We allowed switches to be configured with static IPX

routes or IPX RIP, as required and supported by each pair of switches. Two NetIQ Chariot endstations connected to each "private" network, and each was configured with a network ID of 0dX (the node ID will simply reflect the MAC address of the endstation). Participating vendors provided us with MAC address of the vendors' private network connec-

tions to validate network traces. We configured Chariot to run a 1-minute test.

Nine of the 10 switches participated in this test and all nine passed. NEC's IP8800/730 did not support IPX routing at the time of testing.

Test 10: VRRP (optional)

Participants alternately configured one switch as a master on one network and a slave on another network and connected them to a hub on each subnet. Endstations were attached to the two networks. We performed a continuous series of pings between the endstations. We powered off the master router/switch and recorded the number of pings lost until the network reconverged around the failure and across the slave router/switch. Participants reversed the roles of the master and slave switches and we repeated the test.

Nine of the 10 switches passed this test. (Alcatel elected not to include its OmniCore 5000 in this test.) Each demonstrated that a back-up router will take over in the event of a primary device failure, using the Virtual Router Redundancy Protocol Layer 3 hot-standby routing protocol. This means that regardless of make and model, network switches can act as hot standbys for one another in the event of a device outage.

Looking ahead

While vendors tested here seem to have a firm grasp on providing basic interoperability, many are keeping their eyes peeled for the next set of hurdles.

Enterasys' John Pappas says vendors will have to take 10G Ethernet support into account. "That's where we have to demonstrate the interoperability between the LAN and the [metropolitan-area network]," Pappas says. And with the emphasis businesses have placed on the Internet, Pappas says vendors should prove they are able to interoperate with Border Gateway Protocol implementations, because that is the cornerstone of Internet internetworking.

Foundry's Chandra Kopparapu says vendors should begin to emphasize interoperability with equipment based upon dense wavelength division multiplexing, the fiber-optic technology that carriers are fast deploying in metropolitan- and wide-area backbones.

And Marconi's Scott Felker says that multicasting is playing more of a role with multimedia and voice applications, and users should be assured of interoperability at that level.

The participation in this round of testing is a sign that more vendors are coming to the table ready to share their interoperability capabilities. More importantly, vendors aren't hiding out in mandatory tests but are jumping headlong into optional tests to prove which can back up their interoperability claims and which cannot.

Bruno is executive editor and Tolly is an engineer at The Tolly Group. They can be reached at cbruno@tolly.com and btolly@tolly.com.



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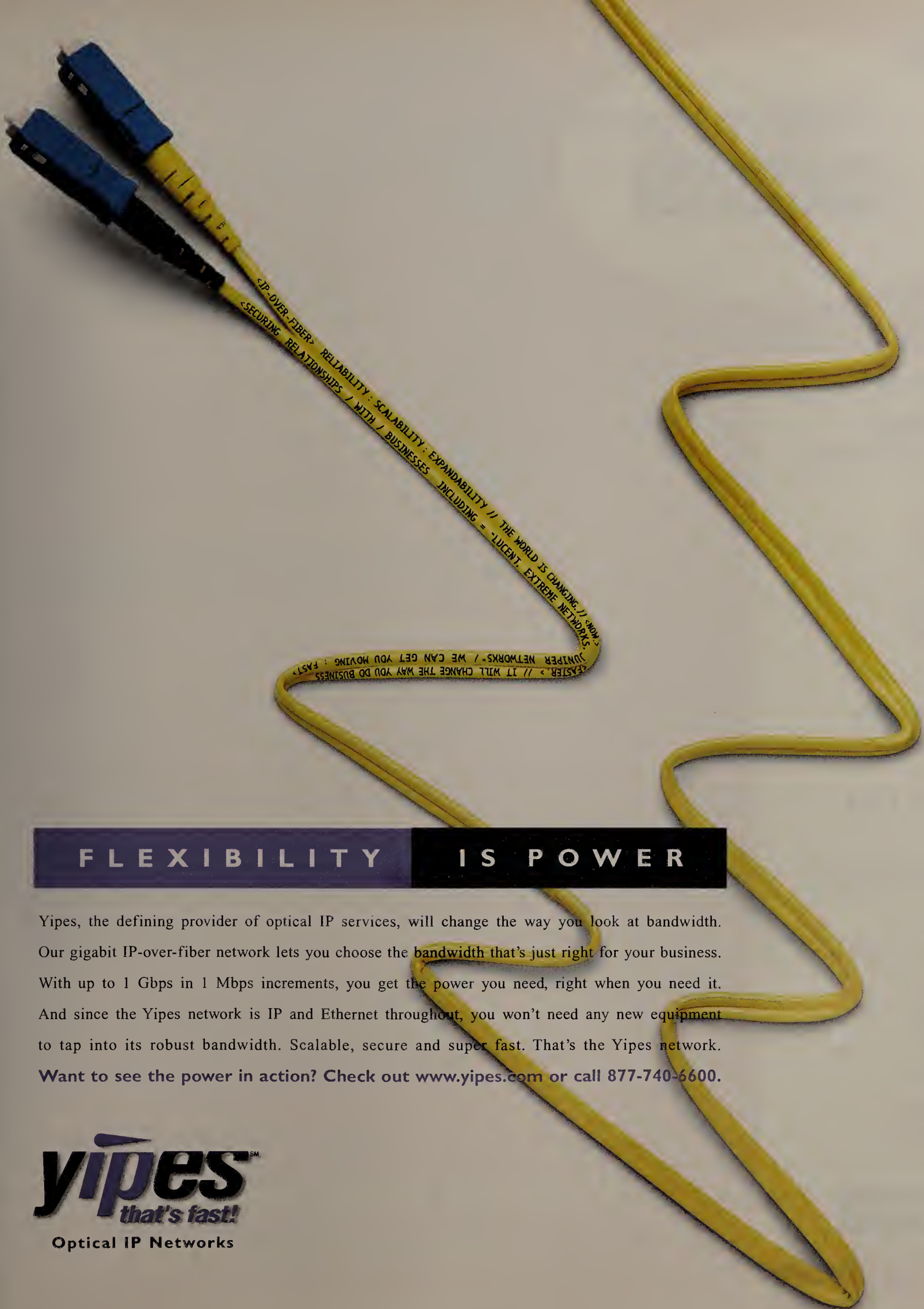


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■ BY CHRISTINE PEREY, NETWORK WORLD GLOBAL TEST ALLIANCE

As IP-based video and voice moves beyond executive speeches (also known as "glamour flicks") into training and other applications, corporations will begin accumulating streaming media content in various formats and places.

Unfortunately, most companies lack the technologies to turn their video archives into assets. Even with a rudimentary archiving system, the majority of a company's archived videos aren't systematically named, nor are contents easily determined by looking at a thumbnail. Some are segmented and synchronized with PowerPoint presentations. Only the most tenacious individual could recycle and repurpose them.

Net Results

Convera Screening Room Version 2.2

A
RATING
Company: Convera, (800) 755.7005, www.convera.com **Price:** Screening Room Video Asset Server, \$49,950; Screening Room Capture, \$19,500; Screening Room Edit, \$7,500; Screening Room Browse, \$500 per seat (quantity discounts apply). **Pros:** Mature and highly sophisticated solution customizable to diverse workflows in midsized to large businesses; easy to use and makes wise use of wizards; scalable architecture suitable for any size deployment; supports versioning. **Cons:** High cost, complexity can make new or occasional users uncomfortable.

MediaSite Publisher Suite 5.0, MediaSite Rich Media Application Server Suite Version 5.0

A-
RATING
Company: MediaSite, (412) 288.9910, www.mediasite.com **Price:** MediaSite Publisher Suite starts at \$15,000; modules are extra, for example, PowerPoint module is \$5,500; MediaSite Application Server starts at \$3,500 (for five-user intranet license); we reviewed the Internet unlimited user license, \$45,000; MediaSite Application Development Kit, \$10,000. **Pros:** Modular architecture highly customizable; scalability to any size deployment; strictly works with metadata, does not alter original media files. **Cons:** Separation of tasks may lead to confusion; high cost; requires customization.

eMotion MediaPartner 4.0.2

B+
RATING
Company: eMotion, (310) 479.3700, www.emotion.com **Price:** MediaPartner \$100,000. **Pros:** A complete digital asset-management system; supports collaborative processes especially around professional video production and review in virtual team environment; scalable, modular architecture; does not alter original media files. **Cons:** Not focused on video indexing; high cost.

Pictron Media Gateway Suite 3.0

B
RATING
Suite 3.0 includes Video Gateway, Audio Gateway, Image Gateway and Media Gateway Search Server.
Company: Pictron, (408) 725.8888, www.pictron.com **Price:** \$5,000 for Video Gateway; \$5,000 for Audio Gateway; \$10,000 for 20 licenses for intranet use of Media Gateway Search Server; \$20,000 for unlimited user Internet Media Gateway Search Server license. **Pros:** Attractive look and feel; appropriate for small company or workgroup implementation; hosted solution has identical interface. **Cons:** Less integration with video production industry standards than alternatives; once search results displayed, Media Gateway Presenter module (not available at the time of review) is needed to synchronize video with other assets (HTML pages, PowerPoint slides).

But products exist to solve this problem, so we set out to examine the options for a midsize corporation that wants to archive its digital video with the goal of reusing segments for new information campaigns, such as product launches. We tested Convera's Screening Room, eMotion's MediaPartner, MediaSite's Publisher Suite, and Pictron's Video Gateway, Audio Gateway and Media Gateway Search Server. We learned that there are more products available than hosted applications. Additionally, despite a depth in functionality, the products were easy to use — once they were customized for a particular corporate workflow.

We decided that Convera's Screening Room was the best solution for a company with divisions in multiple locations, where video was prevalent and the ability to search it would likely increase revenue. Screening Room is a comprehensive, well-integrated and scalable product with an open architecture that promises to continue expanding through Convera's internal development efforts and partnerships with third parties.

RFP responses

As part of our tests, we solicited responses to a request for proposal (RFP) to assess what vendors offered and the costs associated with their product or service (see How we did it, www.nwfusion.com, DocFinder: 5926). Companies responded as if in a competitive bid situation.

Pictron did not prepare a proposal, saying its package does not require professional services for installation and management. Its cost (\$20,000 for its Video Gateway, Audio Gateway and Media Gateway Search Server applications) follows a standard software licensing model. If one were to buy four similar Video Gateway and Audio Gateway systems (one for each product division in the RFP we issued) and use a single Media Gateway Search Server, the cost would rise to \$50,000.

EMotion's MediaPartner 4.0.2 provides a seamless environment for capturing, searching and collaborating with all popular media types. The company's proposal for our fictitious company's digital media ingestion and management project included word processing documents, Adobe Acrobat files, video and still images. While the proposal included integration with a third party's video capture and indexing product (MediaSite's Publisher Suite, one of the products we were already looking at), it differed substantially from those offered by MediaSite and Convera. MediaPartner's core technology focuses on virtual collaboration, annotation (on and around the video frames), and video creation-through-approval workflow notification, as opposed to the repurposing of video assets. MediaPartner also did not include its license cost in its RFP. It would be at least \$15,000 for the capture component of MediaSite Publisher, in addition to the \$100,000 price for MediaPartner.

The two most similar packages we tested, MediaSite's Publisher Suite and Convera's Screening Room, performed numerous steps, including media capture, indexing, searching and export to a Web server. The cost to purchase either product for an "unlimited number" of users was well over \$100,000 (not including the cost of hardware for processing, storage, networking, digitizing cards and the license of an enterprise-grade Open Database Connectivity database). MediaSite's proposal for four Publisher Suite stations and one networked Video Application server, Application Developer's Kit, training and one-year maintenance agreement would cost approxi-

Where to start

Four approaches that a corporate customer can pursue to address the media search/retrieval challenge.

Option 1

Purchase a software application and implement internally.

Option 2

Hire a company that understands assets and business processes to guide you through the development and needs analysis, and develop a solution that merges off-the-shelf and custom code, with new and existing hardware.

Option 3

Outsource to a company with a platform designed for use on the Web (end to end) where most of the media ingestion and logging is automated. The company does not own or manage a streaming media delivery network, but can do some integration with your intranet or any other CDN.

Option 4

Use a hosted indexing, searching and "publishing" system that is tightly integrated with a CDN for one seamless experience.

Examples:	Pictron, Canto Software	MediaSite, Convera, eMotion or Virage resellers	Pictron	Virage, Akamai, Yahoo Broadcast
Pros:	Lowest capital outlay (around \$20,000 to get started).	Once installed, you can manage internally, with or without an extended service agreement.	High level of user-specific customization is possible; low capital outlay; reaches outside enterprise firewall, if desired.	Moderate capital outlay; "single-source" vendor that handles all questions, assumes full accountability; reaches outside enterprise firewall, if desired.
Cons:	Companies that offer this may not have resources to address long-term needs.	Costly and potentially more complex than you might want or need; likely to require process re-engineering and integration with existing knowledge or asset management systems.	Corporate-level customization may not be available; asset or metadata availability may be disrupted by network outages.	Custom features may not be implemented on your schedule; recurring costs may be high.

mately \$160,000. Convera's equivalent system, with four complete Capture and Edit/-Browse stations and one Video Asset Server, would cost more than \$250,000. A scaled-down implementation of Screening Room with a single (centralized) media capture and editing client would cost \$120,000 less and still permit full asset searching and viewing by users anywhere in the company's enterprise network via a Web browser.

To have these investments amortized as quickly as possible, the product should change the way at least some people in your company do business. Risks associated with workflow modification or process re-engineering are hard to measure, and the potential return on investment is often less than predicted. However, recycling and repurposing existing video, while making it a more integral part of the communications process, should cost less than the cost of recreating the content from scratch. Additionally, it will have a more lasting positive effect on remote audiences than text and graphics alone.

Enterprise-worthy?

The first characteristic we assessed in our tests was how enterprise-worthy the products were. We were looking for the following:

1. An ingestion system, consisting of metadata capture and video capture.
2. A sufficiently robust relational database system with a vendor-provided application that includes keyword searches, time-based searches, visual searches or searches on other metadata (such as annotations) from anywhere on a corporate network.
3. A clip viewing/publishing environment and a Web server (for end users who only have Web browsers).
4. A streaming media server (if using a format that isn't integrated with the Web

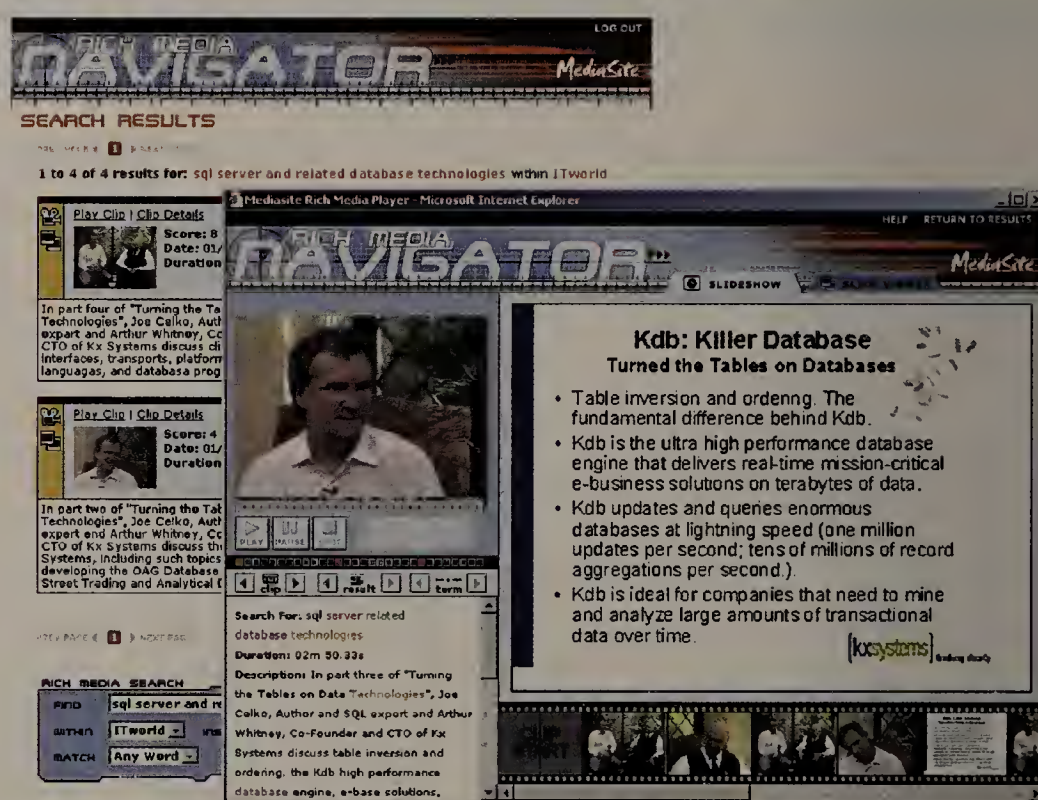
server), and in some cases, a high-capacity, high-accessibility storage system.

These features were present in MediaSite's and Convera's products. Convera's implementation appeared more seamless, although analogous required parts and additional "modules" were available in the MediaSite setup we evaluated. eMotion's product, at least the version we saw, did not permit us to conduct all the tests we set out to perform (such as automatic scene change detection and speech-to-text transcription during content capture), because there were version incompatibilities between the acquisition system (MediaSite Publisher Indexer) and eMotion's MediaPartner 4.0.2. This said, MediaPartner's tools are highly appropriate for collaborative processes such as video review for post production, annotation and obtaining client or management approval on finished content (see "Multi-site collaboration," page 76).

The configuration of Pictron's suite we tested offered the first and third components listed above. However, we think Pictron's suite is best for a small company or a workgroup. The suite ships with Microsoft Access for its database, and we feel that a midsize or large corporation would quickly tax Access' capabilities. Pictron's architecture can accommodate more robust databases, such as Oracle8i or Microsoft's SQL, but we weren't shown that implementation. Even with Access, Pictron's Video Gateway succeeded in completing our ingestion and searching tests, offering a compelling price/performance point for companies that don't anticipate a high degree of enterprisewide workflow integration.

Automation and accuracy

Our next objective was to see how well the automated video indexing systems worked without any special configuration,



MediaSite's Rich Media Navigator lets you easily search for your multimedia content.

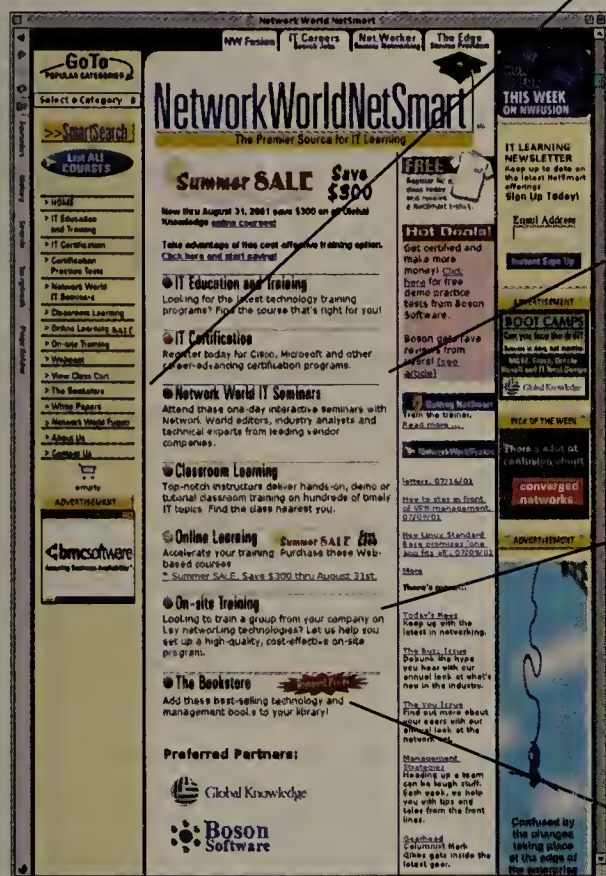
design or speaker training. Because enterprise media doesn't have closed captioning as is often found in news media, we suspected results would vary with the source. We chose to use compressed digital files (.avi) as input because we didn't want to have analog-to-digital boards in each workstation. Vendors warned us that most companies they work with don't begin with digital archives (so we were deviating from a common scenario), and that the audio would have less-than-optimal clarity and fidelity because of compression and sampling of the digital files. We also realized the technology we were using was optimized to automatically transcribe broadcast news content.

Convera, MediaSite and Pictron all license IBM's ViaVoice for their speech-to-text transcription engines. eMotion's

package can be built on any of the video capture tools that in turn have the option of licensing IBM's technology. The text generated by the engine was unusable on all three content sources we used. One source, a 4.5-minute marketing video, had a background music track that interfered with the systems' understanding of the narrator's speech. A professionally produced, quarterly corporate earnings presentation without music also produced aberrant results.

We were informed by Convera's team that if a transcript was made of a speech, the words would be synchronized automatically with the video in software. Additionally, Convera said its customers could have content transcribed (at a rate of ap-

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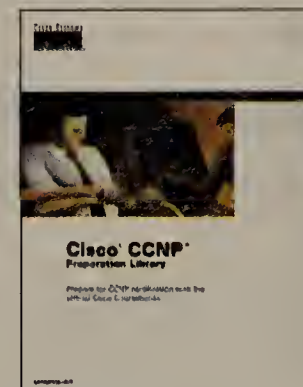
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Video, continued from page 72

proximately \$300 per hour of digital video) by its partner, WordWave (www.wordwave.com). Then, using an import utility from Convera, you could synchronize the file back with the video, producing a cost-effective and accurate alternative to the automated or internal transcription options. Convera had this done on some of our test content prior to coming to the test facility and demonstrated the results of partnering with WordWave.

The automated, video scene change detection features were comparable in the three capture systems tested, as was the ability to have the software create thumbnails, also called key frames, when there were important video events (such as fades, transitions and lighting change) and/or at designated time intervals. However, we concluded that meaningful indexing of content and creation of short, logical segments from thumbnails for searching remains manually intensive.

In our tests, all three indexing engines performed video and data analyses in real time on the server configurations we were provided (in other words, we did not detect any difference in capture speeds and indexing efficiency). We suspect that as the number of users increases and the server is asked to complete more tasks simultaneously, the time to capture and index a file will increase.

Ease of use

We found the graphical user interface in Pictron's 3.0 release very attractive and the most "Web-like" in design, although some icons did not follow standard Windows conventions. For example, an "x" normally stands for remove or "unavailable," but in Pictron's clip assembly interface it stood for "OK." The sparse, text-search screen layout leaves a lot of room for customization by an administrator, a good characteristic in our estimation, as long as you have the skills in-house to take advantage of it. The search results

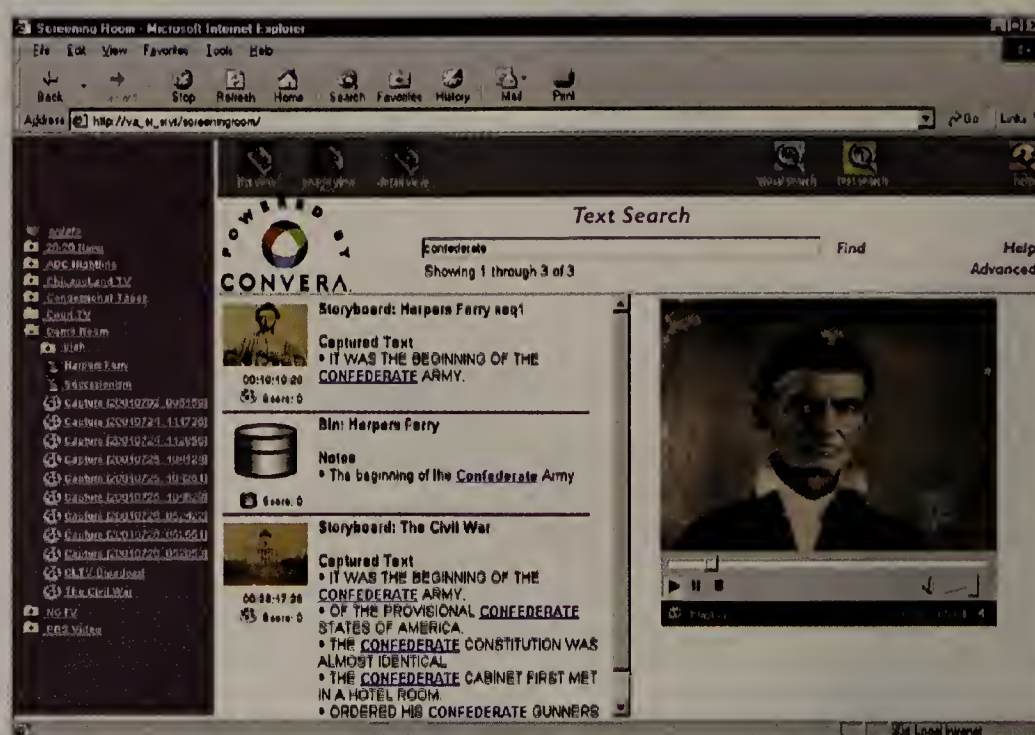
from the Pictron Media Gateway Search Server were easy to read. All vendors' search results pages also used an embedded player window for returning and reviewing the video results.

Since the other packages offer a high degree of flexibility (where many options are offered at the same time), we found that some screens appeared crowded (available options were competing for screen real estate). Fortunately, you can customize most of the layout in the search and viewing mode using a professional services group, a reseller, or in-house engineering with the vendors' respective application developers kits. MediaSite and eMotion also address this effectively by dividing up the features and workflow into component applications.

Our favorite user-friendly tool was Convera's Screening Room Capture system configuration wizard. The wizard guides users through potentially complicated decisions about media capture; file management and posting to content delivery network; display; logging; transfer of metadata to database; searching; and publication. The tight integration of the different parts of the application will likely appeal to users who are responsible for a complete workflow.

In contrast, MediaSite's Publisher Suite has five functional subapplications (Indexer, Editor, Post, Database Creator and Database Tool box). While we were impressed with the applications' functionality and stability, we felt that this architecture could be confusing to occasional users because different steps in workflow were handled separately. We were surprised that MediaSite didn't provide a progress bar to tell us how far into the capture we were, and nothing in the interface indicated when the Indexer had finished. Convera's status window had a progress bar, yet the application also failed to report to us that it had successfully published when we posted to the Web server.

When in indexing and edit views, all systems had intuitive screen composition. Thumbnails created during indexing are



Convera's Screening Room search results also offer a playback window along with the results.

organized in rows in the upper right or left corner; text in lower right or left corner; and the original media viewing screen in a separate window. From an asset browsing and organization point of view, the default is to use Windows directory conventions. Pictron's layout looks a little more like a Web site navigation bar, reflecting its recent development.

We liked that Convera and MediaSite offered wizards to schedule automatic captures from user-designated sources. As in other Convera applications, Scheduler's dialog boxes and menus conform perfectly with Microsoft Windows GUI conventions, with tabs, pop-up menus and check boxes. Pictron's Media Gateway Director, scheduled for release later this year, will also permit scheduling of remote tasks in multiple servers. Although we didn't use them sufficiently to rate their accuracy and clarity, all four products come with online help and print manuals.

Posting, publishing and versioning

When you post or publish to a Web

server, the results are visible to someone using a browser. In contrast, when a video indexing system posts, it is transferring information to the associated database in appropriate fields. Posting, editing metadata, publishing to a streaming server or Web server and facilitating access to media assets (allowing search on key words, for example) are steps that may or may not be performed by different people at different points in time. An administrator can also automate some of these steps.

Convera's SR Capture initiates all post-capture processing as defined during system setup. In MediaSite we found the manual process of posting slightly less intuitive. It appeared to have extraneous steps that may be valuable for a configuration we weren't seeing. We also understand that if the workflow were segmented and assigned to different people (with separate administrative and logical activities), it might be advantageous to have an architecture such as what's found in MediaSite's Publisher Suite and Video Application Server.

Once metadata and video assets are posted, employees (corporate communications or product marketing managers, for example) should be able to access all the databases, preview the content, select certain assets and push out any number of files to an appropriate page based on the target audience. Although not an inherent part of the edit or browsing views, Convera's Video Asset Server and MediaSite's Video Application Server have administrative tools and APIs that can be customized by Web programmers to generate templates into which the thumbnails are published.

Conclusion

Overall, we were very impressed with the degree of maturity and stability in products we tested from Convera, MediaSite and eMotion. This said, we want to reiter-

The services alternative

Instead of dealing with the costs and complexity associated with these products, why not consider using a hosted model? We were aware of — but couldn't test as part of this review — niche and general-purpose hosted applications for video indexing, searching and asset management.

Virage, an indexing and asset-management software developer that was invited to participate but declined, has a video-indexing service bureau to which customers send original analog videotape. Virage employees capture, index and create streaming media editions of the video, on an hourly-fee basis. Through a relationship with Akamai, Virage can also post the streaming media on the Akamai content delivery network on behalf of a customer. Another partnership that joined indexing technologies with service hosting capabilities — Excalibur and Intel's Enhanced Video Services group merged to form Convera in 2000 — has also ventured

into this domain but is not currently offering a commercial service to corporations.

The full-service media service providers we contacted (Akamai and Yahoo Broadcast), which have invested in integrating asset indexing, searching and asset-management systems, also declined to participate. We were told the primary reason these two providers declined is that their offerings concentrate on hosting and delivery of data, including streaming media, not on video indexing or management, and that inclusion in the study would potentially mislead customers.

Despite these providers' positions, we believe the complexity and high cost of the video indexing, searching and management systems we reviewed make it ideal for hosted configurations. We anticipate that within the next 12 months, a company's foray into video indexing and searching will involve one or more service providers to ensure professional management and maintenance of the systems.

Companies to watch at



Amnis Systems, Inc.

(650) 855-0200

www.amnisinc.com

Booth #7361

Amnis Systems (formerly Optivision, Inc.) is the dominant market leader in the networked streaming video market. The company develops, manufactures and delivers MPEG network video products for high-quality video creation, management and distribution worldwide both directly and through leading industry partners. Amnis Systems supplies network-based streaming video solutions for broadband multimedia applications such as distance learning, corporate training, video-on-demand, telemedicine, surveillance, and conferencing.

Anritsu

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Anritsu Company

(800) ANRITSU

www.us.anritsu.com

Booth #1151

Anritsu Company's Network Solutions Group develops IP-based networking and communications solutions for the enterprise and service provider markets. The company's layer 2/3/4 switching products aggregate LAN, MAN, WAN and SAN traffic for today's global optical-speed Ethernet networks. For more information call 1-800-ANRITSU or visit them on the Web at <http://www.us.anritsu.com/networking>.



cawnetworks

Caw Networks

(650) 961-7000

www.caw.com

Booth #6858 (Start-up City)

Caw Networks develops and delivers real-world capacity assessment products. Caw provides specialized architectures and interfaces optimized for addressing these challenges. Caw Networks' products are robust, customer-ready, highly scalable appliances that deliver unmatched performance and ease of deployment, use, maintenance, and administration.



FatPipe Networks, Inc.

(801) 281-3434

www.fatpipeinc.com

Booth #1830

FatPipe Networks develops leading-edge technology that provides highly redundant, reliable, and high-speed Internet access for mission critical applications. FatPipe products enable companies to obtain low cost, highly redundant and fast Internet/WAN access, allowing such corporations to implement Intranets, Thin Client, Virtual Private Networks (VPNs), and other web based applications.

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Fireclick, Inc.

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www.fireclick.com

Booth #848

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Foundry Networks

(888) TURBOLAN

www.foundrynetworks.com

Booth #6129

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ate that the science of managing video as a corporate asset is young and very rapidly evolving. We expect new features designed for corporate content will be available as modules or "objects" within the present architectures. We also expect that some of the services, such as the one hosted by Pictron, will be popular among customers that want to test the waters but not risk drowning in complexity.

Considering the sizable investment necessary to bring these systems in-house, we recommend that anyone planning to make video content searchable identify multiple target applications and not be afraid to change internal workflows to more fully leverage existing video assets.

Perey is president of Perey Research & Consulting, of Placerville, Calif. She pro-

vides market research and business development consulting to companies offering networked multimedia applications, technologies and services to enterprises. She can be reached at cperey@perey.com.



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Considering multisite collaboration

Creation and use of business video is increasingly becoming a collaborative process that spans multiple organizations in multiple time zones, or even continents. A video shot at a Texas branch office to support the global launch of a new product could be reviewed and edited at the company's headquarters in California. Later, a post-production firm in California could make more edits, slicing the video into many clips, and a third company could post it to the company's Web site. At each step, the Texas division and the California headquarters staff need to review the edits and suggest changes. Sometime later, the company's training department, which wasn't involved in the original project, asks to search the archived video looking for clips to use in training material.

In addition to our usability tests, we reviewed each product in light of how they could support such multisite collaboration.

All the products reviewed provided for local editing, indexing and generation/creation of metadata, followed by the posting of video files and associated metadata to a database accessible to other registered users. The indexed video could be searched and viewed by multiple users across multiple sites, but only users with an "edit" (or in eMotion's case an "annotation") application loaded locally on the PC could make changes to the metadata.

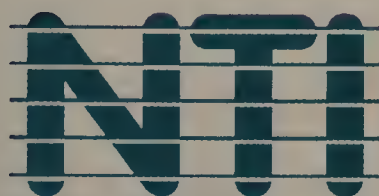
The only product we tested that allowed changes to original media as envisioned in the scenario we tested was Convera.

Upon making changes in a clip, for example, the Video Asset server and Edit client could export an edit decision list for use in a nonlinear editing system, or directly produce a new version of the video and treat it as a completely new asset in the collection.

Christine Perey



Companies to watch at



Network Technologies Inc

Network Technologies, Inc.

(800) 742-8324

www.nti1.com

Booth #2031

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www.rosel.com

Booth #959

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RouteScience

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www.routescience.com

Booth #5463

RouteScience is the first company to offer products that empower enterprises and service providers to control and coordinate their Internet routing at the network edge for both cost and performance. RouteScience PathControl will be shown publicly for the first time at the Atlanta NetWorld + Interop show.



SSH Communications Security, Inc.

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www.ssh.com

Booth #1337

SSH Communications Security is a world-leading developer of Internet security solutions. SSH provides cryptography and authentication technologies for secure Internet communications. SSH IPSEC Express™ is the world-leading, award-winning toolkit for IPsec. The company's award-winning SSH Secure Shell application has become the de-facto standard for secure logins.



F5 Networks, Inc.

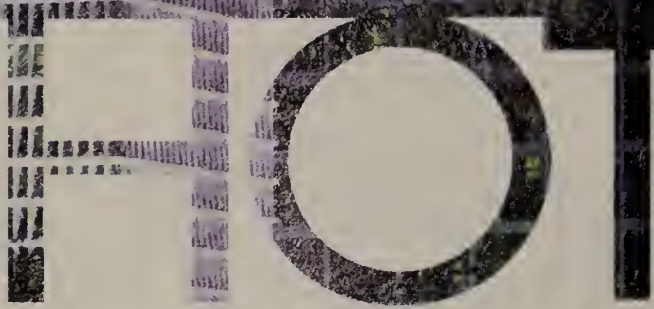
BIG-IP 5000

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www.f5.com

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www.silasreveille.com

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Vendor Dell
Price \$6,485
Processor type 1-GHz Pentium III (as tested)
Number of processors 2
Total number of processors supported 2
Memory configuration 1G-byte RAM, 4 256 dimms motherboard supports up to 4G bytes.
Number of RAM slots 4
Expansion slots Three 64-bit 33-MHz PCI
Disk controller PERC3/di 128M-byte cache battery backup, two channels (2 SCSI, 2 RAID, or 1 of each), ultra 160 with key to enable internal on board.
Hard disk Four 186G-byte 15,000-rpm drives, one 9.1G-byte 10,000-rpm.
Number and description of hard disk Four drives in one bay hot swap on splittable backplane, one drive in expansion bay.
Network interface One fiber 1000Base-SX PCI, one copper 10/100/1000M Gigabit Ethernet on motherboard, one 10/100M on motherboard.
CD-ROM IDE 24x max slimline
Availability features Hot-plug load-balancing redundant power supplies, hot-plug hard drives, battery back-up for RAID cache, ECC RAM.
Manageability features Embedded server management prefailure alert, Dell Server Assistant (automates NT, 2000, NetWare, Linux), IT Assistant (monitors hardware with pager/e-mail alerts), Open Manage Connections (hooks to HP OpenView, CA Unicenter, Tivoli Netview, Array manager), remote array management tool.
Security features Locking mechanism on top of chassis for locking chassis/hard drive, can disable on/off switch, BIOS passwords.
Bundled software Dell Server Assistant Application CD (Array Manager; IT Assistant, Version Assistant), documentation CD-ROM
Warranty 1 year on-site, 3 years parts

Dell PowerEdge 2550

It's not the fastest kid on the block, but is very economical.

■ BY JOHN BASS, NETWORK WORLD GLOBAL TEST ALLIANCE

In the midmarket rack optimized server market, performance and features are the battle cry, but Dell seems to have taken a different approach with its PowerEdge 2550 server. Price appears to be its differentiator. Dell packaged moderate performance and a respectable amount of features into a relatively economical package.

Dell began shipping the PowerEdge 2550 in March. It's a two-rack-unit, two-processor server that's a refresh of the older PowerEdge 2450 but with more PCI slots and a new motherboard. Since August, Dell has been shipping a 1.13GHz and 1.26GHz version. It also has a 933MHz model of the 2550.

Performance

The PowerEdge 2550 earned a respectable 4.2 for performance. This score lands the server in the middle of the performance battle between the faster Compaq DL380 and the slower Hewlett-Packard LP2000r. (See www.nwfusion.com, DocFinder: 5648 for the Compaq review, DocFinder: 5425 for the HP reviews).

The PowerEdge 2550's 1-GHz processors pushed it in front of the HP LP2000r, but were slightly behind the DL380.

Network performance was good as well. It clearly beat the HP LP2000r, but again came in behind the Compaq. The Compaq's 66-MHz 64-bit PCI slots likely helped it outpace the Dell box, which only has 33-MHz 64-bit PCI slots.

In file performance, the server came in behind HP and Compaq. The RAID hardware on the motherboard provides the convenience of RAID in an economical package, but it doesn't necessarily provide the best performance.

Features

The 2550 had an average feature set. Not great, but for the

price, it's hard to argue. The Dell unit costs a little more than half the price of the HP LP2000r and two-thirds the price of the Compaq DL380.

Our server came with two 1-GHz Pentium III processors, 1G byte of error checking and correcting synchronized dynamic RAM, four 18G-byte hard drives and one 9.1G-byte hard drive, hardware RAID functionality on the motherboard, a built-in copper Gigabit Ethernet port, a built-in Fast Ethernet port, and a 1000Base-SX PCI network interface card (NIC). The two built-in Ethernet ports are from different vendors, which could create potential Ethernet driver issues.

The four 18G-byte drives were used for data storage, and the operating system was loaded on the 9.1G-byte drive. The drives were plugged into the five available hot-plug drive slots on the front of the chassis. The hot-plug slots are connected to a SCSI backplane that can be configured as one five-disk SCSI chain or two SCSI chains with two drives in one chain and three drives in the other. Our SCSI backplane was configured as one five-drive chain.

The drive backplane was plugged into one channel of a two-channel Dell PERC3/di RAID controller built into the motherboard. The hardware can be configured as two SCSI channels, two RAID channels, or one SCSI and one RAID channel. An optional 128M-byte battery-backed cache was included with our RAID controller. The RAID controller hardware comes standard on all PowerEdge 2550 motherboards, but you have to enable the option by inserting a 1-by-1-inch card into the motherboard. There are no external SCSI ports on the chassis.

The drive cage holds four drives in the standard configuration. A flexible media bay was outfitted with an optional hot-plug drive slot to make up the fifth drive slot.

The RAID controller was configured with three RAID-zero arrays. One RAID-zero array was configured on the 9.1G-byte drive for the operating system. The other two RAID-zero arrays were configured across the remaining four 18G-byte drives.

The 1000Base-SX NIC was used for connection to our test bed. The two built-in Ethernet ports were not used. The server has three 64-bit 33-MHz PCI slots. None of the slots are hot swappable.

The 2550 has two load-balancing redundant power supplies for power fault tolerance. A few changes such as externally accessible power supplies, hot-swap PCI slots, 66-MHz PCI slots and built-in Ethernet ports from the same vendor would have made the Dell score higher.

Serviceability

The PowerEdge 2550 also scored average for serviceability. Getting to the internal parts of the server is achieved through two large, lockable, hinged doors on the top. Once inside the server, the chassis layout seems a bit cluttered, with ribbon cables and wires running throughout. There are no diagnostic LEDs to help troubleshoot failed or failing components. If Dell addressed these issues, the 2550 would score much higher in this category.

Net Results

Dell PowerEdge 2550

3.68
RATING

Company: Dell, (800) 999-3355, www.dell.com Price: \$6,485 as tested. Pros: Great price. Cons: Difficult to service.



What's the score?

Performance 40%	4.2
Features 30%	3
Manageability 20%	4
Serviceability 10%	3
TOTAL SCORE	3.68

Individual category scores are based on a scale of 1 to 10. Percentages are the weight given each category in determining the total score. ■ Scoring Key: 5: Exceptional showing in this category. Defines the standard of excellence 4: Very good showing. Although there may be room for improvement, this product was much better than the average. 3: Average showing in this category. Product was neither especially good nor exceptionally bad. 2: Below average. Lacked some features or lower performance than other products or than expected. 1: Consistently subpar, or lacking features being reviewed.

NetworkWorld Review

We noticed that the power supplies were only accessible from inside the chassis. This seemed odd because something as fundamental as a power supply should be able to be replaced easily and quickly.

We liked that the chassis has a tool-less design for easy replacement of components, such as disk drives, power supplies and fans.

Initial installation of the server is made

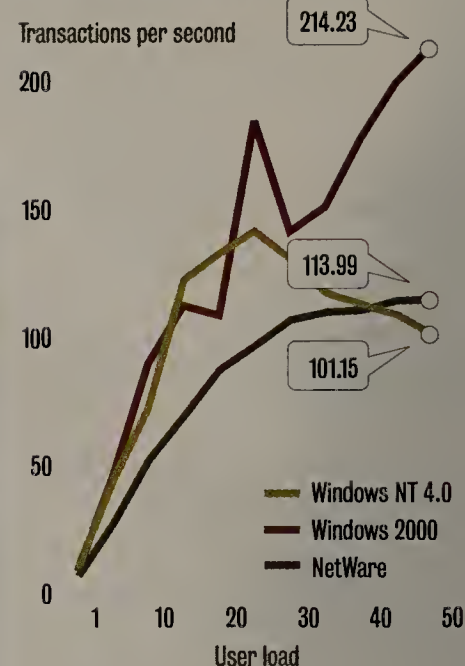
easy with tool-less rack rails for installation into a four-post equipment rack. The PCI slots are mounted in a cage that must be removed to add or remove PCI cards. The cage is fairly easy to remove but a little tricky to reinsert into the motherboard.

Manageability

The PowerEdge 2550 comes with a

PowerEdge 2550 performance

Large file test, sequential transaction type, read/write, 8K-byte block



good management offering, which earns it a 4 in this category. Little has changed in the current management offering compared with what we've seen from Dell. The management offering includes an operating system installation aid; a proprietary management platform; management agent hooks to Computer Associates Unicenter, HP OpenView, and Tivoli Systems; a version management application; and a RAID array manager.

Dell ServerAssistant software automates the installation process to the point where it only requires one reboot for Novell, Windows 2000 and Windows NT 4.0. The IT Assistant application can manage all Dell servers remotely or locally. The new Dell Array Manager lets you configure any Dell RAID hardware regardless of the chipset used in the hardware implementation.

In the past, Dell offered a mechanism for the company to help troubleshoot and configure Dell servers remotely. This service has been discontinued. The Dell product would have scored higher in this category if a better management and monitoring platform offering came standard with the server.

Server testing is performed at North Carolina State University's Centennial Networking Labs (CNL) in Raleigh, N.C. CNL tests networking equipment and network-attached devices for interoperability and performance.

Bass, a senior technical staff member at CNL and co-author of McGraw Hill's Building Cisco Multilayer Switched Networks, designs and leads the execution of the test suites. He can be reached at john_bass@ncsu.edu.

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Here today, gone tomorrow

Be prepared with a contingency plan in case your IT vendor is swallowed up or merges with another firm.

■ BY NICK WREDEN

Barbara Martensen opened a trade journal and saw news no IT executive likes to read: A key vendor, SalesLogix, was being acquired by Sage Software. "It was a surprise, especially since we were in the middle of implementing the Web version of SalesLogix software," says Martensen, a global information officer at Avnet, a semiconductor and computer distributor in Phoenix.

It's a surprise that more and more IT executives face. According to Mergerstat, mergers and acquisitions in the high-tech industry had an aggregate value of \$286.8 billion in 2000. As a result of the volume — and potential impact — of mergers and acquisitions, network executives must factor this possibility into contingency planning.

On one hand, an acquisition can rescue a firm teetering on the edge of financial disaster. An acquisition by a larger firm can also deliver additional support and other resources. For example, Martensen says service improved after the SalesLogix acquisition.

But mergers and acquisitions also have a downside. "The risk is that you can become so critically dependent on vendors that mergers and acquisitions can add significant uncertainty to operations and planning," says Jess Hartmann, vice president and CIO at New Horizons Computer Learning Centers in Santa Ana, Calif.

Negotiating power might be reduced, especially if the deal represents industry consolidation. Service and attention levels may decline. And customers may find themselves abandoned with obsolete technology if acquiring companies seek to migrate customers to their own platforms. One reason IT executives buy from Cisco, IBM or Oracle is because it's highly unlikely these industry giants will be acquired.

Some companies have learned the hard way that industry awareness and contingency planning are vital to minimize the impact of a merger or acquisition on operations. To prepare for Y2K, billing and customer care services provider Convergys in 1997 bought applications from Scopus Technologies, which was then a vendor of customer service and call center applications. Then in 1998, Siebel Systems bought Scopus. "It came as a shock, especially when it turned out that one Scopus license purchase could require multiple Siebel license purchases," says Theodore Cwiok, vice president of corporate technology for Convergys in Cincinnati. "It was a lesson in the school of hard knocks and made us think more thoroughly about every aspect of a vendor deal."

Those lessons prepared Convergys for the fallout after Quintus, a computer telephony integration software vendor, ran into financial and legal difficulties. Although Convergys had several thousand seat licenses from Quintus, it had spread potential risk by purchasing similar technology from Clarify. And Convergys had the right to purchase escrowed source code not only if Quintus went bankrupt but also if it was purchased by

a Convergys competitor. Fortunately for Convergys, its existing vendor Avaya snapped up Quintus.

However, Convergys' initial attempts to learn about the potential impact of the Quintus purchase were handicapped by the U.S. Securities and Exchange Commission-mandated "quiet period," which made it difficult to discuss substantive issues. "As soon as it was possible, we gave Avaya a comprehensive list of outstanding issues and pressed them hard on their product, integration and support strategies," Cwiok says. "They immediately agreed to honor existing service contracts, and we agreed to hold off on contract renegotiations until their plans had solidified."

The acquisition caused little initial disruption, but it cast a shadow over expansion plans. Convergys was reluctant to deploy the Quintus applications to new call centers when the products' future was still up in the air. Instead, IT had to resort to more expensive applications.

What's more, Convergys had to deal with more uncertainty when PeopleSoft acquired customer relationship management vendor Vantive. Soon afterward, PeopleSoft decided to no longer support the version of the Vantive software Convergys was using. Convergys now has to decide whether to continue using an unsupported version, upgrade to the next release, or install PeopleSoft applications with similar functionality.

Companies should move quickly to examine all implications of a merger or acquisition. After hearing from a local sales representative that Newbridge Networks was being acquired by Alcatel, Aliant Telecom's IT department convened a roundtable of the firm's top technology experts.

"We outlined all the 'what-ifs.' What if there was no product evolution? What if

the products weren't supported? What if our costs rose dramatically?" remembers Robert Justason, vice president of broadband engineering at Aliant Telecom, a carrier in Halifax, Nova Scotia. "Although Alcatel stepped up to every challenge and addressed all our issues, you have to act fast and hedge your bets during times of uncertainty."

Because the risk of a vendor merger or acquisition arrives with each morning's headlines, you must work from the start of any vendor relationship to minimize the impact. The tactic of escrowing source code is common. Hartmann recommends including renegotiation clauses in your contracts which stipulate that if any vendor changes owners or goes bankrupt, companies can renegotiate.

Staying current on industry news can help you spot legal or financial difficulties that often precede a buyout. Cwiok regularly updates a list of competitive vendor capabilities in case his company's primary vendors run into trouble.

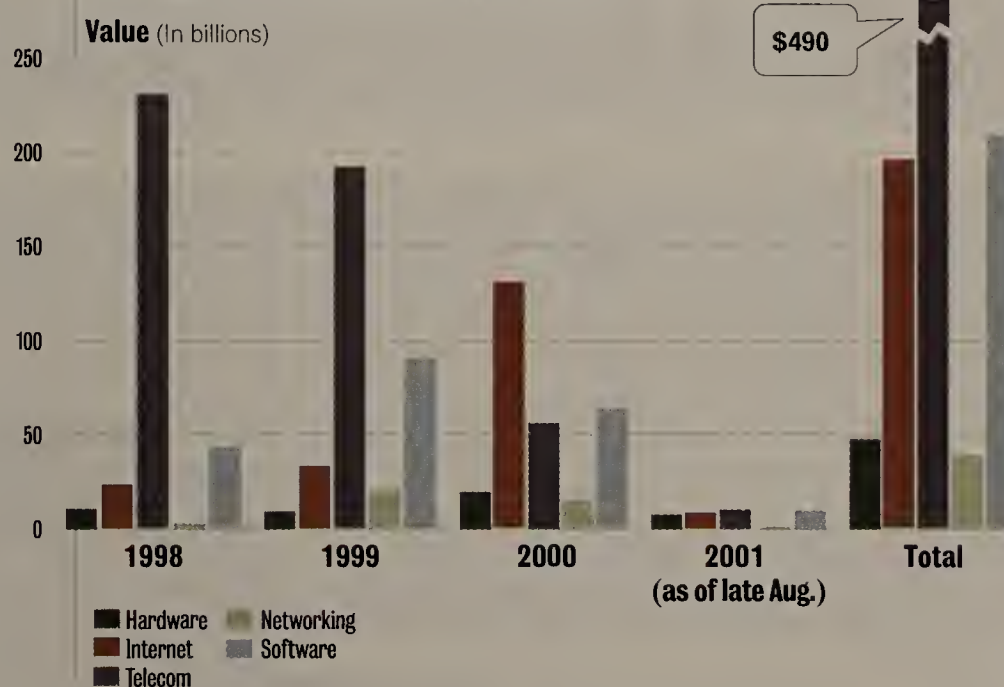
Richard Raysman, managing partner of Brown, Raysman, Millstein, Felder & Steiner LLP, suggests that contingency plans should include multiyear maintenance contracts. Then, if a vendor is acquired, IT departments have some breathing room.

And Martensen suggests that vendors undergoing merger or acquisition deals should communicate the implications to their customers. "It is better than reading about it in the paper," she says.

Wreden is a freelance writer in Atlanta. He can be reached at nick@aspen1.com

M&A mania

While mergers and acquisitions among U.S.-based high-tech firms have declined, the deals still account for big bucks. Here's the aggregate value of deals in various segments of the high-tech industry according to Mergerstat:



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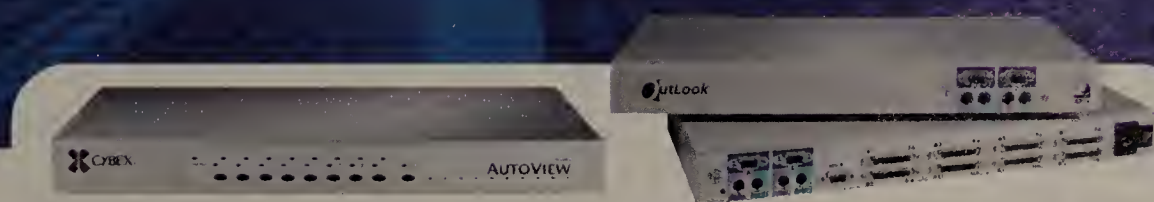
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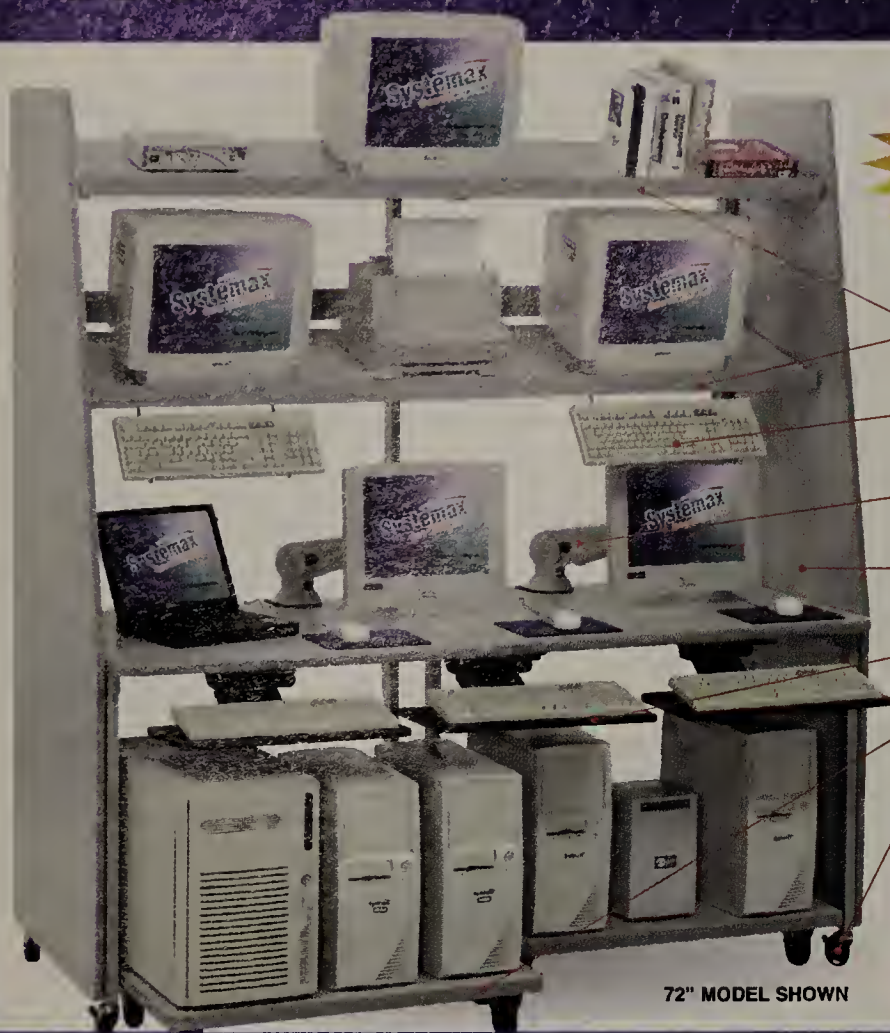
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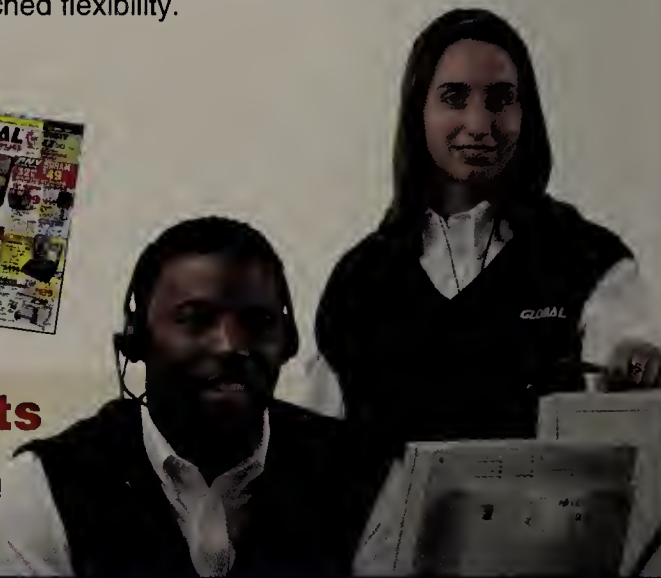
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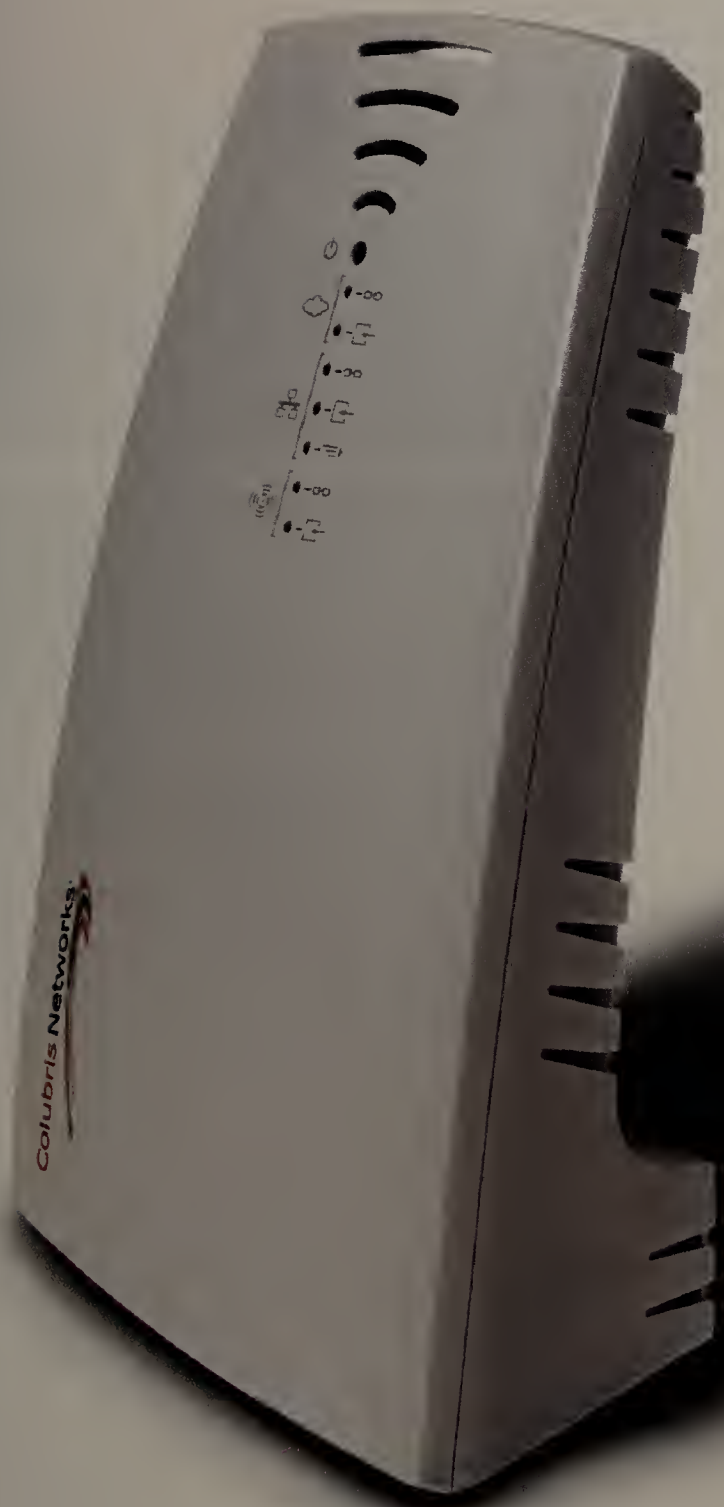
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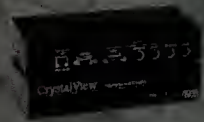
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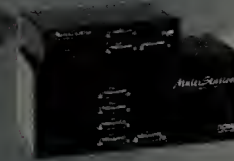
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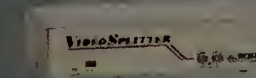
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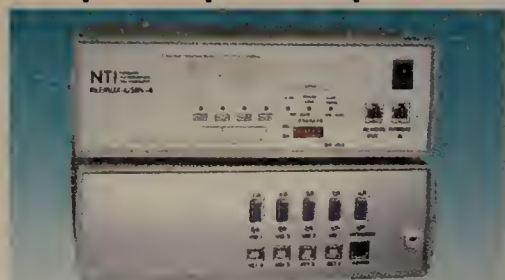
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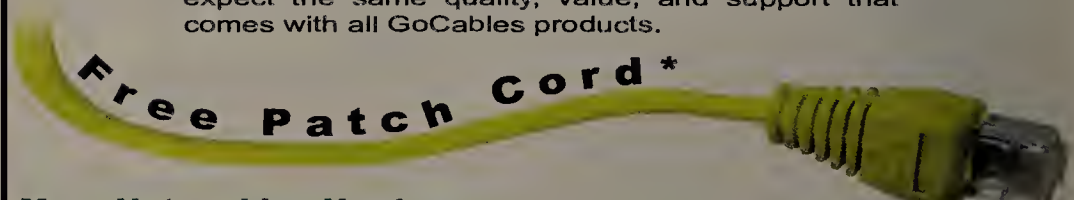
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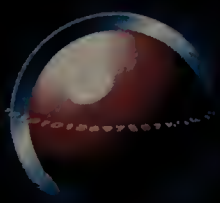
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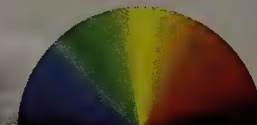
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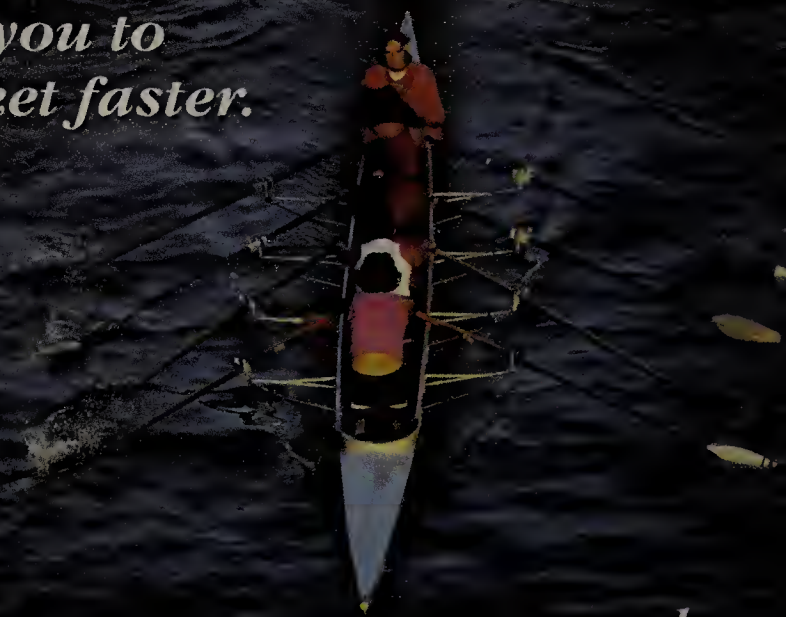
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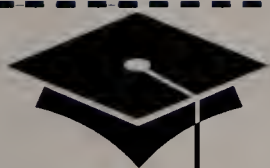
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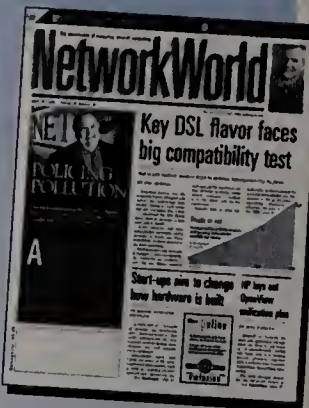
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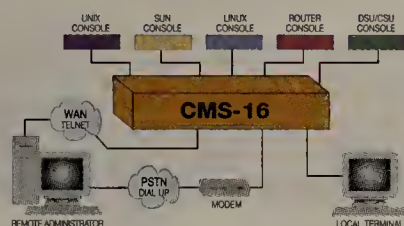
When it comes to Remote Site Management, no one offers more choices to remotely access multiple console ports and/or reboot power than Western Telematic. Our Remote Management Hardware offers the design flexibility you need to mix and match equipment for small or large scale remote management strategies. As the pioneer and leader in Remote Site Management, WTI products are now installed in thousands of network sites world wide. Our customers know they can depend on our superior quality, reliability, and delivery for their mission-critical operations.

Telnet and Dial-Up Console/AUX Port Switch Cost Effective Terminal Server Alternative

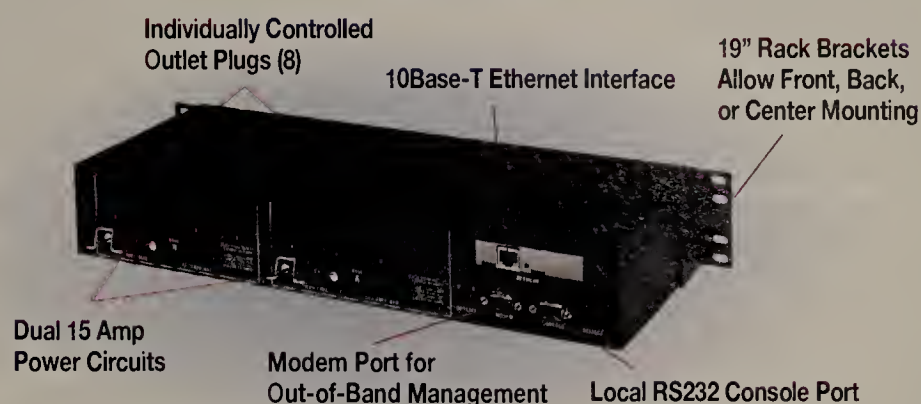


Console Management Switch (CMS)

- 8 or 16 RS232 DB-9 Serial Ports
- Simultaneous Telnet Sessions
- Modem Auto-Setup Command Strings (User Definable)
- IP Security Features
- Non-Connect Port Buffering



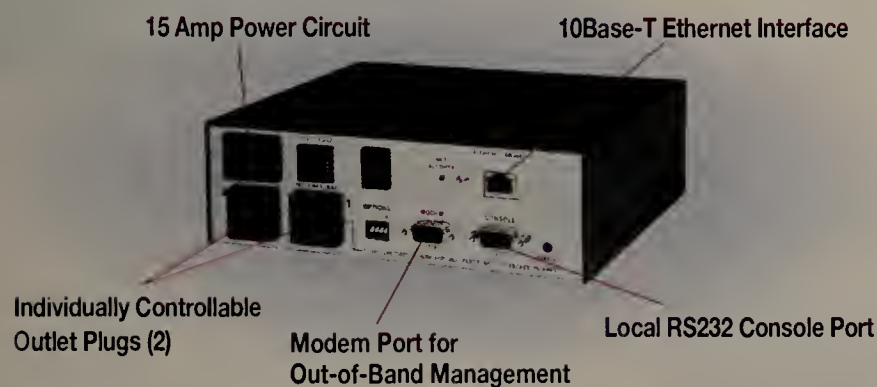
Telnet and Dial-Up Network Power Switch Reboot Locked-up Equipment



Network Power Switch (NPS)

- 8 Individual Outlets
- On/Off/Reboot Switching
- Integral 10Base-T Interface
- Co-Location Features
- Outlet-Specific Password Security
- Network Security Features
- 115-VAC (230-VAC available)
- Power-Up Sequencing

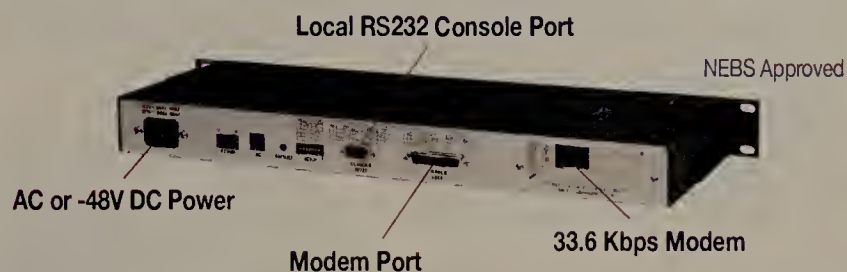
Telnet and Dial-Up AC Power Switch Economical



Telnet Power Switch (TPS)

- 2 Individual Outlets
- On/Off/Reboot Switching
- Outlet-Specific Password Security
- Network Security Features
- Manual On/Off Buttons
- Switches 15-Amp Load

Secure Modem for Remote Dial-Up Management Dial-up Access to Equipment Bays



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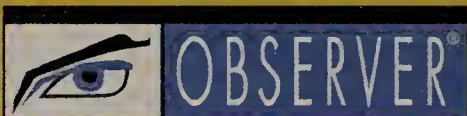
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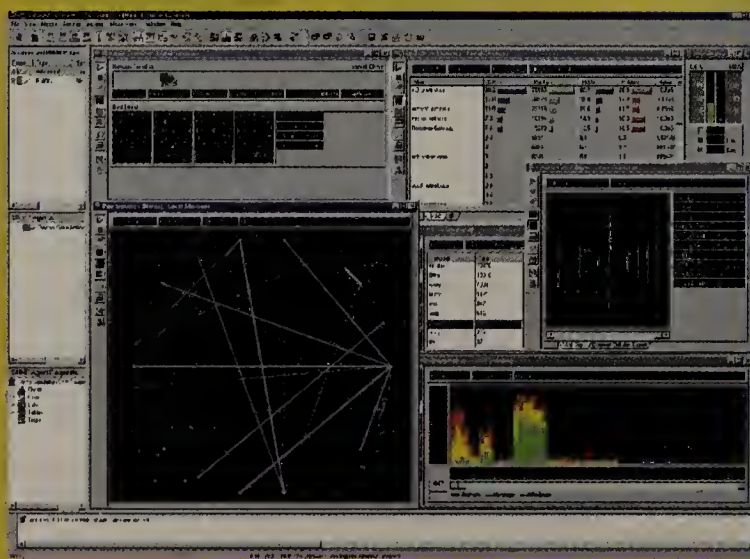
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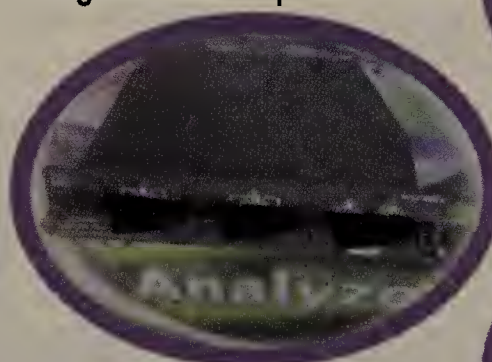
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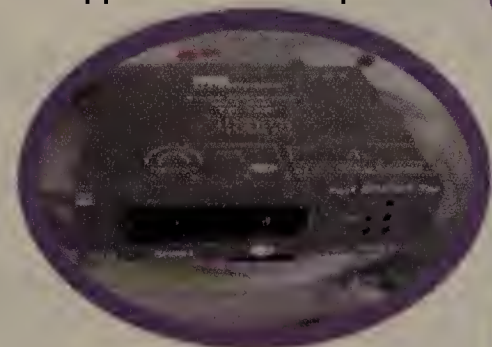
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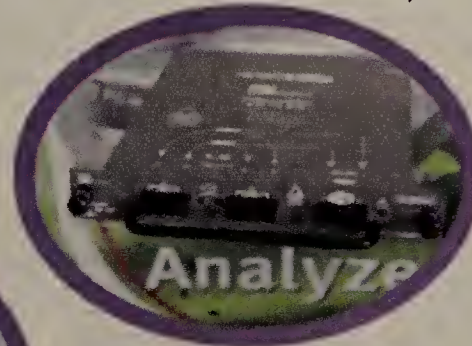
GigaBit Fiber Tap



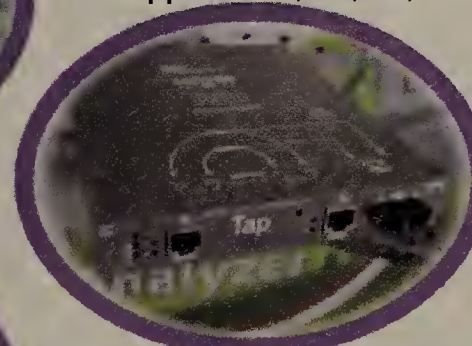
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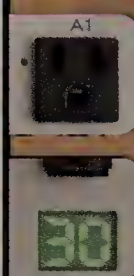
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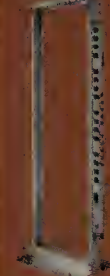
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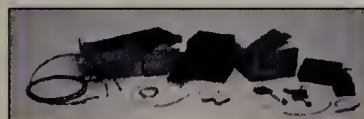
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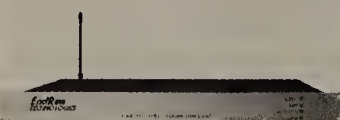
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S/W Engineers to design, develop, implement business applications under client/server architecture using C, C++, Oracle, SQL, PL/SQL, Pro*C, etc on UNIX and Win OS; perform user req analysis and business rule implementation; create repeatable reusable process for handling errors, retrieval, updates, data download/uploads; write triggers, stored procedures and perform database tuning; train/assist end users. Require: MS or foreign equiv. in CS or Electronics/Computer Engineering. Salary: \$80,000/yr f/t. Resumes to ECS, Inc. 8744 Main Street, Suite 101, Woodstock, GA 30186

IT Procurement Analyst - for client hardware & software needs. Advice on integrated IT solutions. Program, systems dev, network & troubleshoot. Structure client MS Office prods train'g progs. 35 hrs. 2 yrs exp. Oracle certified. Fax resume & salary reqmts to (305) 269-1864, Attn: Ms. Ramos.

Analyst/Programmer wanted by Industrial Supply Co in Melville, NY to dsgn, analyze, support & provide estimates for coding, implmtg & documenting applics such as SMRT & CDA, for co's sales & reporting systems; enhance & maintain various functions on AS/400; write code on RPG III & IV. Must have Associates Deg & 1 yr exp. Respond to HR Dept, MSC Industrial Direct, Inc, 75 Maxess Rd, Melville, NY 11747. We are an EOE.

NOVA. Corp., a Design & Construction Consulting Firm in Englewood, NJ has the following openings in the Tri-State area:

SR. PROGRAMMER ANALYSTS (2) Two-to develop front end VB 4.0 Report Modules and OLD DL1 to generate the functionality of reports. Create various reports using Crystal Reports, write stored procedures and develop data uploading programs. Understand & interpret user requirements, create & design documentation & specification, create forms, reports & queries to satisfy user requirements, test & troubleshoot forms & reports and make necessary changes per requests of end users. Must have MS/BS in Elect. Enginn. or Comp. Sci. w/relevant work exp.

SYSTEMS ANALYST (1) One-to perform detailed analysis & consolidate various data sources to construct central data repository to be utilized to query & generate reports & solutions. Write reports, field survey & train end users. Must be efficient with Aperture, AutoCad, CorelDraw, CD Creator, Dbase, Harvard Graphics, Lotus 1-2-3, Microsoft Word & Excel, MiniCad, Photoshop, Primavera, Quark Express & WordPerfect computer software. Must have MS/BS in Facilities Mgmt. or Real Estate w/relevant work exp.

Respond to: Ed Bohn, CFO, NOVA.Corp 74 W. Sheffield Avenue, Englewood, NJ 07631.

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Analyze & eval. existg. or proposed software sys. Dvlps., implmts. & improves prgms., sys. & related procedures to process data using in-depth knowl. of the software dvlpmnt. life cycle. Encodes, tests, debugs & installs opr. prgms. & other sys. software utiliz. knowl. of BAAN ERP tools & prgm. langs.; performs funct. definition & tech. realization/customization of Baan software. Bachelor's deg. or equiv. in Comp. Sci., Math, Engrg., Commerce or Bus. plus 2 yrs. of exp. In position offered or as a Prgmr. Analyst, Software Engr. or Sys. Analyst reqd. Exp. must incl. use of BAAN ERP tools (spec. Baan Mfg., Baan Distrib. & Baan Fin.). High mobility preferred. 40 hrs/wk, 8 am - 5 pm, OT as reqd., \$70,000/yr. Qualified applicants report/submit resume to: Manager, Washington County Team PA CareerLink, Millcraft Center, Suite 150LL, 90 West Chestnut St., Washington, PA 15301. Refer to Job Order No. WEB195806.

SOFTWARE ENGINEERS (10 positions); require Bachelor's in Engineering/Computer Science/Mathematics/Science or closely related major with two years experience providing skills in described duties, at \$70,000 per year; Senior Software Engineers (8 positions) with Master's and two years experience, at \$75,000 per year. Provide on-site consulting in design, analysis, analysis and development of software application in Oracle, DB2, SQL Server and Sybase; e-commerce and web applications development in Microsoft, Java and related technologies; network management systems development with Netscape Server and related tools; SAP R/3 applications on Windows with DOS and ABAP/4 and related modules. 40% travel to client sites in the United States. Mail resumes to: YASH Technologies, Inc., 2100 Parklake Drive, NE, Suite F, Atlanta, GA 30345-2167.

Senior Software (Java/C++) Developer; Atlanta, Georgia: Work w/decoder applet suite to add functionality including, but not limited to, looping, audio or video only support, support for a default image upon applet error, & pause/start/stop support. Enhance & test the video email & demonstration video chat products. Convert company's datagram to a format for streaming in RTP/RTSP protocols. Enhance, test & maintain live encoding & broadcasting products. Add customer-requested features to the applet suite & encoding station. Continue development on the prototype wireless streaming media application. Assist w/coordination & mgmt. of product initiatives. Conduct unit & system testing. Work w/ the encryption initiative to encrypt the EyeWonder encoded file. Assist in developing DSP & FPGA chips for real-time encoding & decoding interfaces to PCs, servers, cameras, internet appliances, & wireless devices. Add access & read protection features to applet suite. Enhance prototype wireless streaming media application to a commercial-grade product. Assist in improving motion-compensation algorithm in the video encoder. Add Jini support to the encoding station to enable service-based encoding. Apply knowledge of: UNIX, IBM's WebSphere or other application server; UML, use cases; fundamental principles of software (version control, source code control, etc.) development; digital signal processing, discrete Fourier transforms, encoding schemes, linear algebra, partial differential equations; object-oriented programming & design to include C++/design patterns; Java w/proficiency in STL, Borland's JBuilder, IBM's VisualAge for Java or Visual Café; streaming protocols such as RDP, RTSP & UDP. 40 hrs per wk. Bachelor's Degree or equivalent in Electrical Engineering, Computer Science or Int'l Business & 2 yrs. exp. in the job offered or in a related software design development position. 2 yrs. must include experience in: developing & implementing use cases, UML models & design patterns in both C++ & Java; solving difficult problems in partial differential equations, linear algebra, digital signal processing & Fourier analysis; source code analysis & using profiling tools; using Java obfuscation tools; reading, writing, enhancing & maintaining sophisticated STL source code related to multicasting & streaming protocols such as RDP, RTSP, & UDP. Forward resume to Jerome Connell, EyeWonder, Overlook III, 2859 West Paces Ferry Rd., Ste. 2100, Atlanta, GA 30339.

Leading software consulting firm involved with building new applications, creating middleware, modifying and integrating existing systems and installing enterprise packages including SAP and Peoplesoft, Siebel, Tibco, Commerce One, Ariba, etc., seeks Programmers/Analysts at all skill levels; Project Managers/Leaders; Systems Analysts; Programmers; Computer Communications & Network Specialists; Software & Hardware Consultant; Computer Engineers; Database Administrators, Information Engineering Specialists. Requirements vary but need at least bachelor's degree or higher; experience in computer systems design and development may be required. Tools we can use: C, C++, COBOL, UNIX, Java, ActiveX, DB2, IDMS, Oracle, Sybase, case tools for info engineering, and internet tools and protocols of all types, especially TCP/IP. Environments include LAN and WAN among others. Travel or reloc may be required. Mail resume with salary expectation to Human Resources Department, L&T Information Technology Ltd., Parker Plaza, 400 Kelby Street, Fort Lee, NJ 07024.

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Senior Software Engineers will design, code and test applications on a Windows NT/2000 platform using VC++. Will propose network design, define implementation processes, troubleshoot potential issues, and code application enhancements to support new product initiatives. New development projects will include building COM components with ADO, XML, and C++ as well as building object-driven, web based GUI using HTML, DHTML, XML, C++ and Java on a scalable, multi-tier architecture. May act as lead engineer on projects and may supervise junior engineers.

Requirements: Master's degree (or equiv) in any computer, mathematics or engineering field and 3 years of relevant industry experience OR Bachelor's (or equiv) in same fields and 5 years relevant experience. Experience may be gained before or after receipt of degree(s). Must also possess strong design and development skills using C/C++ or Visual Basic; experience with development in Windows operating system including server architecture, services, and security features; and experience using three or more of following: RDBMS, XML, ODBC, ADO, HTML, DHTML, COM/DCOM.

Database Administrators/Design Analysts will work with database management system software and develop new procedures to organize and store data. Work with customer support, project and sales teams on database implementation support. Design data models and application SQL for development teams. Test and coordinate changes to models and applications. Plan and manage project implementation of database upgrades. Coordinate database administration with development and production teams. Manage support for multiple test and production environments for client server interfaces. May supervise junior database professionals.

Requirements: Master's degree (or equiv) in CS, Mathematics, or related technical field and 3 years experience in database admin or design OR Bachelor's (or equiv) in same fields and 5 years relevant experience. Must also possess expertise in relational database design and working knowledge of database design tools including database scripts for two of following: UNIX, Oracle MS SQL, DB2, or Sybase; Should also possess knowledge of programming in formal language such as Visual Basic or C.

Apply by e-mail, mail or fax to:

Amy Williams, Human Resources & Recruiting Manager, Lodestar Corporation, Two Corporation Way, Peabody, MA 01960. (F) 978-573-4800. amy_williams@lodestarcorp.com

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Web Administrator. Sunnyvale, CA based semi-conductor mfg co is seeking web administrator to manage its web site. Must have AA deg w/2 yrs exp in job effc or web dsgrn/hosting or prgring. Mail resume to HR, Wave Systems Corp., 1159 Sonoma Ct., Sunnyvale, CA 94086.

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Project Lead Software Development sought by an electronic commerce company based in Palo Alto, CA. Must have Masters degree in Comp. Sc. or Comp. Engrg. With 2 yrs exp. in software development. Respond to HR Dept., Buildfolio.Com, Inc., 1895 El Camino Real, Palo Alto, CA 94306.

System Support Analyst - We are seeking a systems support analyst to analyze and resolve computer hardware and software problems of the Electrical Engineering Department including 350 workstations, servers, network infrastructures and cluster administration. Master of science in electrical engineering or bachelors plus two years experience required. Offering prevailing salary. Mail resume to: PROV-3139, CalTech. 1200 E. California Boulevard, Mail Code 4-11, Pasadena, CA 91125. CalTech is an AA/EOE. Women, minorities, veterans & disabled persons are encouraged to apply.

SAP Business Information Warehouse (BW) company seeking experienced SAP BW functional/technical consultants familiar with generic and custom extractors, data modeling, info sources and info cubes. Also seeking SEM and Supply Chain Management/APO experience. Please e-mail resume to Business Information Solutions at recruiting@bisamerica.com or fax to (858) 458-5819.

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Computer/Info Systems PROGRAMMER ANALYST

Full-time. Competitive salary offered. Requires Master's degree in Comp. Sc. or Eng. and 1-yr exp. in job offered. Education or experience to include use of following computer tools & technologies: Oracle Database, Oracle Developer tools, Oracle Developer Server, Microsoft Visual Studio: PeopleSoft Workflow and PeopleSoft SQR. Must have proof of legal authority to work permanently in the U.S. No phone calls. Interested applicants should send resume to: Greg Shaw, Director of Human Resources, Republic Windows and Doors, 930 W. Evergreen Ave., Chicago, IL 60632. eoe m/f/d/v.

Senior Analyst

Designs and Develops Programs that analyze & verify the patent set up and Dose Distribution of Cancer treatments. Manages & Archives imaging system Databases & Networks. 40 hrs/week. MS in Computer Eng courses completed in Image Processing, Neural/Fuzzy Systems, Network Systems, & Imaging Physics. Respond by resume to Fang-Fang Yin, Dept of Radiation Oncology, 2799 W. Grand Boulevard, Detroit, MI 48202.

Consulting Group seeks Systems/Web Developer to analyze system outlines to develop programs for computer applications; analyze proposed computer applications to determine feasibility; code, test and debug programs; evaluate effectiveness and develop new systems. Must have an Associate Degree in Computer Programming or Computer Related Field; and experience with HTML, Javascript, COBOL, Visual Basic, PL/SQL, PHP exp. Min 3 yrs in-job or job-related exp. Resumes to H.R. Dept Jireh Consulting Group, Inc., 900 North Bend Road, Cincinnati, OH 45224. EOE. No calls.

Multimedia Software Engineer

wanted by software co. in Houston, TX. Must have M.S. in Software Engineering or Comp. Sc., plus 1 yr. exp. Respond by resume to: Mr. V. Tang, P/D, President, Tietronix Software, Inc., 1002 Gemini Ave., Ste. 126, Houston, TX 77058.

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CGS is also known for its enterprise resource packages, which are currently licensed in 22

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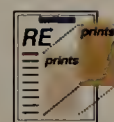
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HP/Compaq

Continued from page 1

\$9.6 billion for Digital in 1998, while HP's bid last year to buy out PricewaterhouseCoopers failed. Meanwhile, both companies are reeling from \$80 million-plus losses in the second quarter.

Those facts, plus the lack of details by HP and Compaq officials on how their overlapping product lines would shake out, has many users nervous.

"Until the news of this merger, we had plans to standardize on Compaq ProLiant for all of our servers. I need to know that I can get a replacement hard drive if one goes bad two years from now," says Jeff Couillard, senior network engineer for Clayton Group Services in Novi, Mich. Couillard has an assortment of Compaq Alpha and ProLiant servers, HP LHR Pro and Dell PowerEdge gear. "If the ProLiant line is scrapped in favor of the HP L-series, I could be in trouble."

Couillard has started considering Dell for his server buys.

Verizon Senior Systems Engineer Dave Anderson says there won't be a lot of time given to the two companies to spell out how they will handle the transition. "As for a technology road map, I would like to know what HP's plans are," he says. "The sooner they spell it out, the better. It would be hard to believe they woke up one morning and decided to do this. They must have a plan ready."

"I just spent \$100,000 on Compaq servers and now I am wondering where my spare parts will come from," says Jeff Allred, manager of network services for the Duke University Cancer Center.

"We are hoping to get five years out of these servers."

"The most important thing for me as an HP customer is continuity. I have come to depend on them. If this deal drags them down, service and support will most likely be cut. This would hurt me and my business," Anderson says.

Industry observers echo user sentiment.

"You should be worried about the product you have decided on for the next five years," says Martin Reynolds, an analyst with Gartner. "And, you might think about going with IBM or Dell to reduce risk." He says HP will not be able to afford to carry both products from its existing hardware offerings and those from Compaq, so massive cuts of both products and people will be in order (see graphic, below).

His characterization of the acquisition: "It feels like a real stinker."

Server quagmire

Potentially the deepest quagmire for the new company will be sorting out servers.

HP has servers that range from single-processor, inexpensive NetServers aimed at small and mid-size businesses for \$950, multi-processor NetServers costing about \$23,000 and high-end V-Class HP-UX servers priced at more than \$1.8 million. Compaq has single-function appliances for Web serving at \$1,400 and multi-processor ProLiant servers for as much as \$90,000. It also has entry-level Tandem NonStop servers starting at about \$120,000.

"I think they should focus on Compaq ProLiant computers," says Bill Claybrook, an analyst

with the Aberdeen Group. "Compaq is the volume leader, and when you think of Intel you think of Compaq. On the higher end, with 64-bit Itaniums, it is hard to tell which company's server will be better."

Although HP and Compaq simplified their product lines by recently ridding themselves of PA RISC and Alpha processor-based systems, experts wonder if their 32-bit Itanium platforms will survive in the new HP. Both companies have also stated that they will support 64-bit Itanium and move

isolated.

Kumar says Compaq's fault-tolerant Tandem systems "provide the extreme reliability required in key markets. HP offers some of the most powerful scientific computers in the world." In that vein, experts say the hefty HP 9000 Superdome Unix server, which combines support and services offerings normally reserved for mainframe customers with the option of multiple-choice CPUs and eventually multiple operating systems, to play a big part in the new HP's high-end server fam-

lagged behind Unix market leader Sun and Tru64 has a 2% marketshare, according to Gartner, which could spell the demise of the system in the new HP.

As for Linux, Claybrook says, "HP has a better Linux strategy, which would be wise to tie to Intel and Compaq. HP has built an enterprise business strategy around Linux where for Compaq, Linux is more of a technology group."

In two to three years, Claybrook says the HP operating system lineup could look like Himalaya, HP-

The new HP

Four business units will make up the proposed company:

Business unit	Head/Company	Value	Products
Imaging and printing	Vyomesh Joshi, HP	\$20 billion	Printers, scanners, digital imaging
Access devices	Duane Zitzner, HP	\$29 billion	PCs, handhelds, calculators
Services	Ann Livermore, HP	\$15 billion	Service, support, consulting, integration
IT infrastructure	Peter Blackmore, Compaq	\$23 billion	Servers, storage, software

existing RISC customers to that platform. By contrast, IBM has Intel-based servers, its PowerPC-based boxes and mainframe-class servers to maintain. Dell has the simplest server line of all — single to multiprocessor Intel servers.

Ashok Kumar, an equity analyst with US Bancorp Piper Jaffrey, says the new company will have a much larger share of the upcoming Intel 64-bit Itanium market than IBM and be better able to take on Sun, which has surpassed HP in overall server market share. He says as the industry shifts to Itanium from proprietary platforms; Sun, with its SPARC platform, will become

ily. The box is expected to rival IBM's multiprocessor Blue Hammer systems by year-end.

On the desktop, the new HP will be highly dependent on PCs and while the company could see some \$29 billion in revenue from this area alone, it is a market in major decline.

As for handhelds, Compaq's iPaq is selling well, while HP's Jornada — a nearly identical device — hasn't garnered as much market share. Many observers believe the iPaq will survive.

Operating systems

Consolidation will likely rule on the operating systems side of the acquisition.

HP's focus recently has been on Linux for low-end servers, Windows for midrange and Unix on the high end. Compaq supports Tru64 Unix as well as VMS, Windows NT/2000, Linux and NetWare.

"If it's up to Hewlett-Packard, they'll be presenting the lineup as HP-UX as the high-end enterprise offering, Windows [NT/2000] as the line-of-business or workgroup application and Linux as the environment for Web-centric computing," says Dan Kuznetsky, an analyst at market research firm IDC. He predicts that Compaq's OpenVMS will disappear.

Although Claybrook says HP will have to protect the installed base of Tru64 and OpenVMS users or risk losing them to Sun or IBM. HP and Compaq have

UX, Linux and Windows all running on Itanium, with Tru64 and OpenVMS getting little or no enhancements.

In the storage and services arena, the overlap is less pronounced. "Both companies have complementary products such as the HP StorageApps management and virtualization software," says Jamie Gruener, an analyst with The Yankee Group.

"The [Compaq] StorageWorks arrays will become the midrange storage products, so all HP's mid-tier products go away. HP will stick with its OEM relationship with Hitachi on the high end because Compaq doesn't have anything," says Steve Duplessie, an analyst with the Enterprise Storage Group.

Compaq President Michael Capellas says the new company will have \$87 billion in revenue — including combined services revenue of \$15 billion, which would be the third largest in the industry.

But according to a Gartner statement on the acquisition: "Both companies have service operations largely limited to hardware support, and have not been able to move into fast-growing businesses like consulting, system integration and outsourcing, and will not be able to do so without significant extra investment." ■

What will survive?

Analysts expect the outcome of product and operating system overlap resulting from the acquisition to look something like this:

Products	Hewlett-Packard	Compaq	Predicted survivor
Intel servers	NetServer	ProLiant	ProLiant
Unix servers	V-class, Superdome and other HP-UX systems	Alpha Server	HP servers based on Itanium processors
Operating systems	High-performance Linux	Industry-standard Linux	Industry-standard Linux
	MPE/IX	VMS	Neither
	Windows NT/2000	Windows NT/2000	Windows NT/2000
	HP-UX	Tru64 Unix	HP-UX with best of Tru64 Unix
Storage hardware	XP 256/512	StorageWorks	XP 256/512 in high end; StorageWorks in midrange
Storage software	StorageApps, OpenView	VersaStor, SANworks	StorageApps, combination of OpenView and SANworks
Network and systems software	OpenView, TopTools	Insight Manager	OpenView, Insight Manager
Network hardware	HP ProCurve hubs, switches and routers	Ethernet adapters	Unclear



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VPN,

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In both scenarios, the NetScreen devices would sit on the data center side of dual switch/routers that have separate connections to the Internet. When all devices were functioning, each switch/router would feed Internet traffic to one of the NetScreen boxes.

With the first new back-up option, if a switch/router feeding Internet traffic to the NetScreen devices failed, both NetScreen devices could continue to function. With the second option, if one of the switch/routers as well as a switch between the NetScreen device and the data center failed, both NetScreen devices would stay active and sessions would not be lost. If the back-up switch/routers and switches were fast enough, throughput to the data center would not dip either (see graphic).

"It provides the capability to lose more than one device and still be able to continue to function without losing connectivity," says Martha Young, an analyst with Enterprise Management Associates. She says NetScreen is the only vendor she knows of with this capability.

The software upgrade runs on NetScreen 1000 and 500.

Separately, a new two-port Gigabit Ethernet module will be available for NetScreen 500 by the end of the month.

Travlin Ravlin

Meanwhile, RedCreek is introducing a firewall/VPN box called Travlin Ravlin, designed for home offices, stores and



RedCreek's Travlin Ravlin device offers broadband backup in the event of line failure.

unattended bank kiosks. The device can link a PC to a DSL or cable-modem line, and if the broadband line fails, automatically dial up a new VPN connection using an integrated analog modem.

When the broadband line comes back up, Travlin Ravlin drops the analog connection and re-establishes the higher-bandwidth circuit.

The device could be used to support telecommuters who require a link to corporate network resources to do their jobs. If they have only a DSL or cable modem connection and it goes down, they would be stranded.

RedCreek says the device is well suited to unattended bank kiosks that connect to central databases to collect customer account information. The dial-up failover can keep these kiosks working until downed circuits are restored or a technician can be dispatched.

Similarly, retail stores' broadband connections used for inventory or credit card look-ups will be backed up. Typically these stores lack on-site technical staff.

Travlin Ravlin costs \$700 and is available Oct. 15.

NetScreen: www.netscreen.com; RedCreek: www.redcreek.com

Peakstone watches Web site usage

■ BY DENISE DUBIE

ATLANTA — Peakstone, a start-up offering capacity management software, will debut the latest release of its flagship software at NetWorld+Interop 2001 in Atlanta this week.

The company says eAssurance can determine how much hardware and software is needed to support applications for intranets and Internet sites. The software can also identify excess capacity.

Peakstone says last year's booming economy led to many companies overprovisioning their nets to gain a Web presence. With times tighter, companies need to pull as much use from what they already have.

EAssurance, first released in January, has been improved to provide more financial reports, including some looking at cost of capacity, gross profit and cost of transactions. These will help users decide how much money a network costs them and how much it can potentially make for them, Peakstone says.

EAssurance measures usage in intranet and 'Net environments, and monitors all Web-based applications. From a network's dedicated server, but out of the path of intranet or Internet traffic, the software collects data from database servers, Web servers, other management software and applications.

Peakstone also places software on Web servers that tracks the round trip of a request from a server to a database and back. EAssurance determines how much bandwidth an application used, how long a transaction took and how many elements were underutilized. It also prioritizes requests according to rules net administrators set.

Peakstone will demonstrate its eAssurance software in Microsoft's booth at N+I.

Available now, eAssurance starts at \$96,000. The package runs on Windows NT/2000 and Sun Solaris systems. Peakstone offers eAssurance with 30 days of on-site service for \$125,000. The company also offers the product as a managed service.

Peakstone: www.peakstone.com

PROFILE: PEAKSTONE

Based:	Sunnyvale, Calif.
Founded:	February 1999
Primary product:	Software called eAssurance that lets users quantify and manage application infrastructure capacity.
Key personnel:	T.M. Ravi, CEO; Derek Palma, CTO.
Funding:	\$20.1 million in venture backing from JAFCO, Bay Partners, Advanced Technology Ventures and a team of private financial backers.
Partnerships:	Qwest, Exodus, Microsoft, Sun, Cisco, IBM.

VoIP,

continued from page 12

provider deploys and manages for the customer. Users can also support internal voice traffic over their IP LANs with this service, but they are not required to use the Nortel PBX. Most users that buy this service will have an older switch that is being phased out. Cable & Wireless will also upgrade users' cabling to Category 5 or 6 to better support advanced applications.

"These services will give Cable & Wireless a good leg up with customers in terms of supporting voice applications over data networks," says Counse Broaders, senior Internet services analyst at consulting firm Current Analysis. The carrier is talking about supporting IP phones and unified messaging, but isn't discussing traditional cost savings associated with voice over IP, he says.

Convergence PBX costs \$13,200 per month for a customer with

200 users that signs a five-year contract. The IP-LAN service costs \$15,000 per month for a customer with 300 users. The contract is for three years. These prices include hardware and management, but do not include initial network consulting and installation fees.

Broaders also says he was surprised that Cable & Wireless did not come out with a long-distance voice-over-IP offering along with this service.

While the carrier isn't launching a wide-area managed voice-over-IP service, it is planning a new VPN service called IP-VPN QoS.

The service will run over Juniper switches that support Multi-protocol Label Switching (MPLS) for traffic management and guaranteed class-of-service. It's not clear when this service will launch, but when it does it's expected to offer three classes of service — premium for real-time voice, enhanced for sensitive traffic such as transactions

and standard for e-mail or Web traffic.

While Cable & Wireless develops its IP-VPN QoS service to support voice over IP, competitors AT&T and WorldCom are forging ahead with WAN services announced in January (www.nwfusion.com, DocFinder: 5986).

AT&T extended the reach of its managed voice-over-IP service to 40 countries with its Managed Data Network Service last week. The company has been offering its Managed Internet Service VoIP and its Managed Router Service VoIP for a few months. Customers can send intracompany voice traffic over AT&T's Internet backbone and to the public switched telephone network.

WorldCom's IP Communications service also allows users to send voice traffic over their data network services. But only frame relay and ATM customers can use the service. WorldCom is offering off-net calling to IP Communication users. ■

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BackSpin Mark Gibbs



Monitoring the asylum

After finding out that their Internet usage was being monitored by the Administrative Office of the Courts, the judges in the Ninth U.S. Circuit Court of Appeals in San Francisco demanded an end to the snooping. But now the Judicial Conference of the United States is thinking about requiring Internet monitoring of all federal judiciary employees, judges included.

In response, the Electronic Frontier Foundation (EFF) released an Action Alert by e-mail on Sept. 4 saying: "The Electronic Frontier Foundation believes that if we can't trust judicial employees to use computers appropriately, then we shouldn't trust them to administer our courts. The intrusive monitoring of e-mail, Internet usage, case-related materials and even private correspondence — perhaps to be conducted by an outside commercial company — raises serious privacy issues."

While I admire the EFF, this is ridiculous. If you work for a corporation and management mandates monitoring and filtering of your Web browsing and e-mail exchanges, tough luck, the company has every right to do so.

The corporation might be concerned about bandwidth abuse, access and distribution of illegal or prurient content that the company could be liable for, distribution of pirated materials or a

score of other issues. The action might also be to ensure that viruses and Trojan horses aren't acquired through e-mail and that users don't download unknown and unapproved software.

Despite what many people assume to be rampant Big Brotherism, the object is usually not about "spying" on employees — it's about deflecting problems, saving money or preventing legal tribulations.

There is no doubt that some organizations have abused the trust of their employees by, for example, misusing e-mail content, and there is certainly the risk that company management with a political or religious agenda could easily place inappropriate blocks on e-mail and Web content. Fortunately such companies are few and far between.

Now, in this case, the management is the Judicial Conference of the United States. Folks, this is not North Fork Hay and Grain or Phil's Furniture World. These are serious dudes and public servants to boot. They don't decide anything without orders signed in triplicate, sent in, sent back, queried, lost, found, subjected to public inquiry, lost again and finally buried in soft peat and recycled as firelighters (apologies to Douglas Adams).

Thus we can conclude that this was most likely a serious decision — a strategic decision. Yet the employees — the judges — ordered a one-week shutdown of the monitoring! Would I be going too far to suggest that the lunatics have taken over the

asylum? What makes the judges so special that they shouldn't be monitored?

Don't tell me that the judges are more ethical or moral than the rest of us (remember the Clarence Thomas case?). Why should they care if their bosses are keeping tabs on which sites they visit ("Your honor, you visited Persian Kitty 38 times last month" — "Research, my boy ... now, where are my golf clubs"). And if the judges' e-mail messages are private and so confidential why aren't they using some kind of encryption system?

Now if, as the Ninth U.S. Circuit Court of Appeals in San Francisco suggests, monitoring is "possibly illegal," then I'd love to know why corporate monitoring hasn't been challenged.

What worries me is that the judges seem to object to being treated as regular folks. When it comes down to it, if their concern is disclosure of privileged case information then surely the judges can negotiate with their bosses and agree how information about their browsing and e-mail use will be acquired, handled, analyzed and stored. Indeed, the judges should be demanding that funding and research be allocated for securing their computer use.

The EFF is suffering from knee-jerk liberalism. Our judges need to be watched like everyone else.

Who's watching you? Views to nwcolumn@gibbs.com.

Compendium Stuff you just can't miss



Adam Gaffin

No, no, don't worry. We haven't done anything to 'Net Buzz. Buzz is off on paternity leave and will be back just as soon as he starts getting a decent night's sleep again (well, OK, maybe a wee bit sooner than that). In the meantime, welcome to the first printed version of Compendium. Every day, I surf the Web looking for unusual networking-related Web sites, then post links to

them in the Compendium Weblog (memo to boss: This is harder than you'd think). What follows is a sort of Best of Compendium. To get to the sites listed below, go to Fusion at www.nwfusion.com and type in the DocFinder number in any Search/DocFinder box.

Ballmer Funkadelic

By now, of course, you've seen (more than once) the Steve Ballmer Dance Monkey Boy video and the Sweaty Steve and the Developers loop. You may have even read the rant about how Microsoft deliberately released the videos to draw attention away from the antitrust aspects of the Windows XP release.

Watch the ultimate in Ballmermania: Ballmerfunk Music Video. After seeing this techno-funk classic, you'll never hear the word "developers" the same way again.

DocFinder: 5987

Enum as mark of the devil?

Here we thought Enum was just a way to link phone and IP networks. But it turns out the proposed directory system is raising some serious privacy concerns. The *Los Angeles Times* reports on a proposal to dole out a unique 11-

digit identifier to pretty much everybody. Groups such as the Center for Democracy and Technology say the system needs a way to opt out for consumers who don't want to be branded.

DocFinder: 5988

AOL gives user permanent demerit

A U.K. user of AOL called for some technical support and mentioned she was using Internet Explorer. According to *The Register* report, the customer "support" person reacted thusly:

"I'm sorry, Madam, I will have to put a note to that effect against your file; by using Explorer you have forfeited your right to technical support from us in the future."

The woman promised to switch back to the default AOL browser but was told that it was "too late."

DocFinder: 5990

Rerouting around censorship

The *San Francisco Chronicle* reports that the U.S. government hopes to use a peer-to-peer application to circumvent Chinese Internet censorship.

SafeWeb's Triangle Boy uses encrypted and spoofed packets via a client applications to let an end user bypass content filters (hmmm, all you administrators busy installing content filters, take note). Oh, and digital certificates are involved, so users can be sure they're connecting via a real Triangle Boy site, not a government honeypot. SafeWeb is partially funded by In-Q-Tel, the CIA's venture-capital wing.

DocFinder: 5991

Need more information? Check out the daily edition of Compendium (DocFinder: 5993). Site submissions are gratefully accepted at agaffin@nww.com.

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